File No. 349

1985.

Collection No.

1LL 47
1.
17

Mysore Residency

16-1-47.

Pros. / Serial. Nos. 1-37

186

Subject.

Water Supply of the C & M Station and City of Bangalore. Measures for improving —

Previous References.

Later References.

F 252/95

S. 97. (Blue.)

MGIPC—PP—725DCF—S&P—(G-1576)—14-2-28—60,000.

The Bewan is quite ready as he told me to-day, to agree to giving water from Sankey's Reservoir to the Millers Tank system whenever it is needed, if the C & M. Station will bear the cost of pumping if the Water is below the Weir. & he consents to an enquiry into the Water supply of the Station & the Delta & written by Major Bowen, or by a Committee consisted of

Major Maltby
Col. Benton

Mr. MacLaughlin

Mr. Richetts

with myself as Pres., he would abide by the decision of ~~Colonel~~ Major Bowen in the Committee.

CJ 20-8-85.

Mess. Hewes 26-8-85

Rule 12 of this Rule Book is to
incorporate Lt. Col. Richetts'
Addition Rule with Major
Bowers & Major Mallby's
Remarks) should be printed
printed on card Press.
25 Copies should be struck
off. 2 Copies should be sent
to each Member present &
also Colonel Burton, R.E.
who was absent on the 8th

10.10.85.

Submit to Press & Ck me
see the Proof sheets
J. H. U
10.10.85

2 Copies of the Rules, for
Resident Submitted &
and draft forwarding Copies
to the members present
also Sub? for approval
H. 16.10.85

~~Ma~~ cośkolwiek Laskowi powiem WIG

Resztę Lasce. Bóg z wami

Cześć.

J. Bł

18.10.83.

K. W.

112

Note.

Owing to the continued absence of Colonel Burton R.E. in Madras no further meeting were possible before the 8th. Residents departure on tour, which is fixed for the 19th inst.

G 16. 11. 85.

Resident's

K. W.

OFFICE NOTE

Proceedings.—

No.

As Serial No. 17. in this (No. 349 of 1885) the Resident ordered that all Files connected with the water supply of Bangalore, shd be submitted to him a day or two before the meeting arranged for, at the Residency tomorrow

Files Nos 103 and 105 were submitted to Resident last evening.

Files Nos 349 and 370 of 1885 are now submitted

5. 3. 86.

Resident. 9 10 a 6. 3. 86

2. Please to circulate the notes below for correction & amendment if needed, & for signature. When received back let the usual number of copies be

distribute copies
to the members of the
committee. When this has
been done I should like the
file returned to me.

J. 12.3.86.

3. Submit draft for circulation.

J.W.K.
12.3.86

4 Draft submitted accordingly.

K. 13.3.86. Issued J. 10 h. 15.3.86

5. Memo: issued No 657 dy. 18.3.86 Serial No 21.

6. The Rules of Conference have been circulated and received back duly signed by the Officers present at the Meeting held on the 12. Mar. 1886. Serial N: 20.

7. The Rules may now be made over to the Residency Pens to be printed after the Resident has seen the remarks made by Lt. Nicholls Col. Benson. & Major Rowcroft.

K. 30.3.86.

(Continuation of Note or Precis.)

169

8 For remarks see the end of S 20

Resident I.A.R 30.3.86

G 31.3.86.

9 Sent to Press I.H.L 31.3.86

10 Mr. Lamer. Residency Press.

K.C. 31.3.87.

Serial N: 22 11. Note received from the Press on the 3rd April 1886.

12. Dft submitted disturbance Rpt Note & the Enclosures who were present at the Meeting on the 12. March. 1886. see para. 2 of Note.

K.C. 3.4.86. Issue. I.H.L 5.4.86

Serial N°23. 13 Letters issued to the members. vide 894/3495 dated 6th April 1886. GR

14. File submitted to Resident as ordered in para 2 (page 2) of this Note.

K.C. 7.4.86.

15. This file is not properly arranged. There are two Sl 21 - Letter not any Sl 22. Rearrange & return to me with 2 spare copies of the Notes of the conferences held on

Oct. 8. 85 & March 12. 86.

G 8.4.86.

16. File resubmitted, with 2 spare copies of the Notes of Conference of 8. Oct. 85 and March 12. 1886

K.C. 8.4.86.

17 No. 25 should be prickly printed & duplicate proofs be sent up to me. More care should be taken in correcting them than the Press has recently evinced in work of this kind - when passed, 25 copies of the Minute should be sent to the Pres: of the C & M. Sec^s for distribution amongst Municipal Comm^rs & for office record, copies should be sent to the Local & Madras Press (both English & vernacular) & copies to J.O. - A few copies should also be obtained from our Agents. I should like half a dozen for myself. So arrange accordingly, please. The

This to J.O. will have to be sent under a covering letter.

G 12.5.86.

To Mr Brudenell Rice. K.C. 12.5.86

(Continuation of Note or Precis.)

18. Two proofs of the Resident's Minute on the Water Supply of Bangalore, as Lemoine submitted.

H. 14.5.86

19 Proof corrected & returned

G 15.5.86.

Copies of this Minute should also be sent to the General Commanding the Bangalore Division, & the Deputy Surgeon General, & to the Madras Govt. (P.W.D.) & a copy be placed in file 70 of 85. G 15.5.86.

20 3 Offs submitted accordingly.

H. 18.5.86

21 Copies of the Minute to be sent to the Local & Madras Govts. may be endorsed "Forwarded to the Editor — with Mr. Gribble's compliments".

H. 18.5.86 PW 19/5

22 Copies of the minute were sent to the local and Madras Press on the 20th May 1886. B.Pr.

23 Letters issued as directed in para 19 of the Note to the undermentioned persons:—

The officer Commanding. B. D. }
" Dy: Surgeon General. B. } No. 1418/3495.
" Secy to Govt. Madras. P.W.D. }

and also to the Foreign Dept^t (H) No. 1417/3495 &
the President, C^l Isolation, No. 1419/3495.
as directed in para 17 of the Note.
B. Pr. 21-5-86. B.R.

6 Copies & Receipt.

8 Copies

Madras Mail.
" Times.
" Standard.
Atheneum and Daily News,
Bangalore Daily Post,
" Spectator.
The Karnataka Prakasika, Kasim-ul-akbar

8

3 Copies.

10 Copies.

25 Copies.

1 Copy in File 70 of
1 in File 349 of 85.

vide file no 252/95

K. W.

RESIDENT'S OFFICE.

Proceedings,—

No.

OFFICE NOTE.

Sd No 34

With letter No 23 dy. 4. April dy the Presidt Municipal Com: C. & M. forwards a copy of correspondence between him and the Secy. Supdt D.P.W. — Col: Cragath in his letter of the 26. Feby dy asked the Secy D.P.W. to sanction the Slime being found and the water from the Reservoir on the Kumbir Road passed into No 1 and 2 reservoirs. The Secy. in reply said that there appeared to be no objection to the same in running down the water just now (March 8y) into Millers Tanks No 1. 2. & 3 —

Recd & Sd No 34

Sd No 34

In the letter under disposal Colonel Cragath asks that the Division may be addressed with the view to necessary orders being issued for diverting the water

from the Reservoir into millers
Lambs No 1 & 2. the Engr. D. P. W
having refused to comply with this request.

Smith does not however appear
necessary to address the Barbar
on the point at issue, for
in a subsequent letter of
6: April 87 from the Engr. D.P.W
forwarded to this Office to Col.
Ingrath - he appears to have
changed his views and
stated that he had issued
orders to turn down water
to no 1 Lamb -

The Correspondence may
be filed for reference

H. 4. 4. 87

S.P. A: 35

Yes - but enquire privately
from the Inspector of Mines
whether the engine
works the engine

SC

15/4/87

Wm Manley of the Municipal Office inquired of who
says no further action necessary - H. 20. 4. 87

MINUTE, BY THE OFFICIATING RESIDENT, ON THE WATER SUPPLY OF BANGALORE.

The object of various measures to which the attention of this Residency has been given during the past fourteen months has been to increase the water supply of Bangalore and to improve the quality of the water.

2. To this end the bed of the Shoolay Tank was deepened and the weir and the embankment which surrounds it were raised in the spring of 1885, the result being that an additional depth of two and a half feet was secured over the whole reservoir. The cost of the work was Rs. 7,200. There still remains the work of enlarging the catchment area of this Tank and that at Hakitimanhalli, where more water is much required. The outlay on this account is estimated at Rs. 4,000, of which Rs. 1,000 have been entered in the present year's budget, and will be sanctioned, for a feeder on the side of Trinity Church.

3. During August and September 1885 about 35,000 cubic yards of earth were dug out from the bed of the Lower Ulsur Tank, on the northern and eastern sides, at a cost of about Rs. 5,600, and were formed into an island and an embankment on the eastern side, which are being laid out as ornamental grounds. In the conduct of all this work the help received from Colonel Burton, R. E., was very valuable. The total sum voted by the Municipality of the Civil and Military Station for the improvement of this Tank is Rs. 10,000. Since the end of last September the progress of excavation, and the raising of the waste weir, which was a part of the general scheme, have been stopped, owing to the high level of water in the reservoir caused by the autumnal rain. It is very desirable that both works should be taken in hand again whenever circumstances admit. Here as elsewhere it is of great importance to increase the capacity of the reservoir. For want of a higher waste weir much water ran off and was lost last October.

4. In connection with this particular supply, the Municipal Commissioners have exercised a wise forethought in acquiring the Jeevanhalli Tank. The cost of this has amounted to Rs. 6,675. The Tank will serve as a valuable feeder to the Upper Ulsur Tank.

5. The result of what has been done at Ulsur is to lessen in the Lower Tank the area exposed to evaporation, and to increase the capacity. As the level in the Lower Tank sinks, the Upper Tank is drawn upon at once to supply the deficiency, and so long as there is water in the Jeevanhalli Tank, the Upper Tank will similarly be replenished from it. The chief loss of water, in an extensive but comparatively shallow reservoir, such as the Lower Ulsur Tank, is due to evaporation, not to consumption. The device of preventing evaporation by means of aquatic foliage has not proved satisfactory in India. Hence the necessity for meeting the difficulty by restriction of area and corresponding excavation.

6. The Madras Government has a separate project under consideration, whereby, at a cost of about 2½ lacs of rupees, it would fill the Lower Ulsur Tank entirely from a new catchment area on the east side of the Tank. The undertaking is prompted by the wish to afford the European soldiers, who are entirely dependent on the Ulsur reservoir, purer water than it is believed can, with the best conditions, be secured under the present system. As the Madras Government is ready to bear all the expense, and as it has given an assurance that the rain drainage from the cantonment bazaar &c., which now enters the Tank from the west, shall not be cut off till the success of the new gathering ground to the east shall have been fully established, the Municipal Commissioners of the Civil and Military Station have raised no objection to the proposal. They are averse to sharing the cost, not only because it would be difficult to find the necessary funds, but also because they do not feel justified in making such a marked change, so long as the water supply, as at present it exists, is acceptable to the townspeople and not unhealthy in its effects. The scheme is now before the Mysore Government, whose consent has been sought to the alienation of the land involved by it.

7. Much has been done of late to purify, and to maintain pure in its passage to the Ulsur Tanks, the water which runs thither from the western side. Within the

gathering ground there is much cultivated land. This it is practically impossible, owing to the prohibitive cost of compensation, to throw out of cultivation. But scavengering is systematically carried out, and patrolling frequent in all places of public resort. For the protection of the Tanks eight watchmen have been appointed at a cost to the Municipality of Rs. 56 a month. It having been found that on the occasion of heavy rain in the Cantonment bazaar the main drain overflowed into the main sewer, the dividing wall between them has been raised, so as to prevent this evil, and has satisfactorily withstood the test of the late sharp storms. The nuisance caused by the pollution of ground in and about the tanneries and potteries has been much diminished. New sites, beyond the limits of the catchment area, have been chosen for small pox and cholera camps, with special regard to the accommodation of the homeless poor in time of scarcity or famine; for experience has proved that the inhabitants of the town are best treated for infectious and contagious diseases in their own houses. A new site has also been chosen for the Hindu Burial Ground, which it is hoped that the Durbar will concede. In such case the present one will be closed with as little delay as possible.

8. The supply of water to Miller's Tanks, which is the third of the three great systems on which the Civil and Military Station depends, has been facilitated by the construction of a diversion sluice in Cunningham Road to serve Tank No. 3. The channel with which such diversion is connected is one of the principal feeders of the Sampangi Tank, which lies for the most part outside the limits of the Assigned Tract. Consequently, as the Durbar has a direct interest in the matter, it has been suggested that it should be left to the Public Works Department Secretary of the Mysore Government and to the President of the Civil and Military Station to agree when the diversion sluice should be used, and that in case of difference the Resident should settle the question. This arrangement I hope that the Durbar will acquiesce in.

9. Advantage would be gained, I believe, by deepening all three Miller's Tanks, provided that the lower soil is tenacious enough to hold water, and provided that there is no risk of setting free malarious influences if the present bottom be disturbed. Such has not been the result of the excavations at Shoolay and Ulsur. I also think favourably of a scheme advocated by Mr. J. W. Hayes, Municipal Commissioner, for the construction of another Reservoir below, but in close vicinity to the Shoolay Tank. The configuration of the ground is such that the undertaking is not likely to be very expensive. Mr. Hayes puts the cost at Rs. 15,000, irrespective of compensation for house property. Population in this neighbourhood is numerous and apparently on the increase. Hence the desirability of intercepting and holding water which, as actually happened last year, may otherwise run to waste. In the present year I am afraid there is no prospect of funds being available for this work. I am also strongly impressed with the necessity of taking water nearer to the houses of the inhabitants as soon as money can be spared. At present the distance to which poor persons have to go for water, specially those who live in the Cantonment Bazaar, is considerable. This improvement may perhaps be best effected by pumping from existing reservoirs through pipes into cisterns or open basins at convenient centres. In connection with it the establishment of drinking fountains and drinking troughs at places of general resort seems desirable.

10. Not long ago it was represented to me that the water level in the wells of the Civil and Military Station has been steadily getting lower for some years past. The fall has been variously attributed to the increased growth of casuarinas, which have a great tendency to absorb moisture, to a diminution in the rain fall, and to other climatic influences. The subject is, I think, worthy of investigation. At present the information at disposal is too limited to warrant the assumption that the water level in general has sunk. Till this fact has been established it is premature to speculate on the causes which may be at work.

11. The construction of the low level sluice from Sankey's reservoir for the benefit of the City of Bangalore does not in my opinion imperil the interests of the Civil and Military Station. Colonel Sankey's main object of continuously supplying the High Ground and neighbourhood with water having failed, and there being no present means or likelihood of achieving that object, it would be an act of selfishness to oppose the utilization of such water as can serve the City under circumstances when

the high level sluice cannot be worked. Apart from this consideration the city has a claim by reason of the catchment area of the Dharmabudi Tank having been circumscribed by the formation of Sankey's reservoir. The distribution of the water can always be determined by the Resident and the Dewan in consultation. It was by mutual agreement that Miller's Tanks were thus replenished last autumn in a season of exceptional drought. As no difficulty was then experienced there is reason for anticipating as satisfactory results in cases of future necessity. There seems no likelihood of raising the level in Sankey's reservoir, except at inordinate expense, and with risk of taking from the supply of other tanks in the neighbourhood.

12. The importance of not allowing present sources of water supply beyond the limits of the Assigned Tract to be interfered with for purposes of irrigation or otherwise has been recognized, and assurances have been given on the part of the Durbar that it will not allow such interference and that practically now it stops such interference in all cases which are brought to its notice.

13. There has not been leisure, on the part either of myself or of the Engineer officers who have favoured me with their help and advice in the above mentioned matters of more immediate importance, to go deeply into the larger consideration of making Bangalore independent of its present system of tanks and wells. Even the preliminary enquiries involved in such schemes as that of leading water from Nundidroog and of pumping from the Cavery would necessitate the employment of specially qualified professional men at no slight expense. That the cost of either scheme would be very great is beyond doubt. Such cost could only be met by a water rate on the population which would be unobjectionable, if it did not exceed the present cost of fetching water, but which otherwise might press on a community that believes municipal taxation to be already quite high enough. Geologists have hitherto declared against the practicability of Artesian boring. It may be that this process, when more perfected, may solve the difficulty. Such a measure would be less likely to be hampered by questions of compensation; it would be without the risk of intermediate interruption which is attendant on the other two schemes, and it might be comparatively inexpensive. The deep borings which are now being made at various points on the Kolar Gold Fields may show what volume of water is to be hoped for at specified levels under known conditions of intervening rock or other material, and may yield information on other important points. Meanwhile I think that the Municipalities of Bangalore will be wise in restricting themselves, as regards improvement, to the lines which they have been pursuing of late.

MAY 12TH 1886. C. E. R. GIRDLESTONE.

Mysore Residency Press, Bangalore.—15-5-86.—100.

1885. 86.

MYSORE PUBLIC WORKS DEPARTMENT.

OFFICE OF THE RESIDENT IN MYSORE
No. 577
JUL 85

No. 3440
704

100

From

The Secretary to the Government of Mysore.

To The Assistant to the Resident in Mysore.

Dated Bangalore 8th July 1885.
Despatched

Enclosure No. 1 Drawing.

Subject.

Has the honor to forward the enclosed tracing of the Survey of Bangalore Water Supply reservoir, as personally desired by the Officiating Resident.

C. Huntington Captain R.E.
Secretary to the Govt of Mysore P.W.D.

Encd
and.

Dear Mr. Girdlestone

I enclose the copies of the papers you want.

We have just had an odd Provincial Meeting about the introduction of the Madras Act. After having discussed it at numerous meetings I believe,

during the last 15
months and after
a Sub Committee had
sat to consider
the provision weekly
for 3 months past;
the majority of the
Comm today threw
it out and said they
were quite satisfied
with the present
imperfect Regulations
The Sub Committee
most accurately, as I
think, recommended a
considerable increase in our
rates of taxation

and this fact the Country against connecting the Act at all, though I tried hard to explain to them that I was not in favour of adding to our present rate of house tax & that if we were in their power to stick to the present rate and still introduce the Act-

Yours truly

Lancaster

18th July

The Water Supply of Bangalore

Submitted by me to Dr. Hill. 15.7.

Bangalore has just passed through a crisis in its history, which but for a providential and opportune fall of rain that afforded relief to the demands for all purposes, must have led to a terrible water famine with its concomitant evils of disease & death

2. The crisis is for the present past, and a state of relief is doubtless felt by all in authority, who are responsible for the welfare & lives of the large body of Troops cantoned here & of the two great Communities of the Pettah & Cantonment.

3. The experience of the past makes it essentially necessary to devise means to avert a calamity which will come upon Bangalore as surely as an enemy & more unexpected.

4. Water is an important factor, not only for our kitchens & our tables, but for sanitation. Without water to drink we thirst, without water for ablutions and sanitary measures we sicken and die.

5. Cholera broke out in that trying time before the saving showers fell, & had they not fallen, in all probability, no medical skill, clearing of drains, or drenching with disinfectants would have stayed its march.

That the use of impure water for domestic purposes with its absence for flushing drains, taken with the exposure of decaying vegetation in empty tanks hastens on the development of the germ is a fact well known, and has been

established by the late expeditions fomed in Europe & in India.

6. Therefore had the rain fallen, & supplied the required water, the full disease would have spread like a Prairie fire. with that result as to mortality we need not pause to ask, nor attempt to estimate the heavy loss to the State, as well as to individuals and to the general community.

7. What is very patent is, that under such circumstances, and at such a time, no half measures will suffice. An additional tank here, or a new pucka there, the re-planning of an existing channel, or the removal of nuisances can only avail to a little, but not meet in any adequate manner an acknowledged desideratum. All are but temporary makeshifts for the very plain reason that -

8. Bangalore is at present dependent on its local rainfall to fill its supply tanks & to keep up the spring level of wells. It follows that if the local rainfall fails to keep supply tanks A B C full, additional reservoirs E F G dependent on the same source cannot be filled, though there be a dozen feeders to each.

However it does not appear that sufficient allowance has been made for absorption in the present area from which the surface drainage is obtained. It is a loose earth, readily drinking in moisture, and the water that has time to drain off being inadequate to maintain the present supply tanks, will not meet the demands of an ever increasing population, & a large area of garden cultivation

9. Certain localities in India are found to be liable to famine, and the lands to be beyond the reach of irrigation. In such

Cause the Government came to the wise Resolution that the only means of increasing the water supply was to make Railways to carry food from those parts where it was, and to spare. Even so must Bangalore look for water from elsewhere. That elsewhere is in and around the Sources of the Penaar & Palaar Rivers at Nandidroog.

10. It is asserted that Bangalore lies on the summit of the Mysore plateau, & that no water can be led to it. This is a fallacy. It has been proved, from levels taken, that the area draining into the sources of the above Rivers is higher than Bangalore. The rainfall there is not only greater, but more certain, the rain clouds being attracted by the mountain.

11. Beyond the possession of an independent supply, the advantages to be gained are a larger & purer quantity from these gathering grounds, which are of rocky formation & precipitous. Secondly the supply will be delivered for use at Bangalore on a higher level, & just as it is now below it. Arrangements being made for proper supply tanks, cisterns, in fact water can be laid on without pumping or by any other means of raising it.

12. This command of the water is a most important point in connection with the Sewers of the place. Flushing sewers in the latrines is a necessity.

13. Sir Arthur Cotton & R.L. reported to the same effect. The highest authority in such matters. Local officers who have spent their lives in Mysore & know the country well, lead & have the same opinions.

14. The Capital outlay for this Project

may seem too large to admit of its consideration but per contra sums up what insufficient supply has cost & will cost. To which add the cost of a drainage system such as that apprehended only lately.

5th. The Project wants to be elaborated, which would not take long if an experienced & specially qualified Engineer be deputed to carry it out, one whose whole time & attention can be devoted to it, independent of the cares of other duties & of the requirements & probabilities of War.

H. Bancroft
14th July 1865

J. R. Milne C.E.
late Engr & Surv. Ry

G. R. Milne C.E.

Municipal Commrs office
Civil and Military Station
Bangalore 7 April 1885.

No. 65 & 2 Ec

Circular Memorandum

During the last year or two there has been a good deal of Correspondence about the Silver Tank and about the supposed effect on the health of the British Troops caused by drinking its waters

The waters are more especially alleged to have a bad effect when the tank is low.

It would appear that Colonel Maguth (who was acting as Brecinct) requested the Deputy Surgeon General to give him some information as to the difference in the health of the British troops in the years when the Silver tank was full or the reverse, and that Officer forwarded the accompanying

ing

Memo which I now circulate to Commissioners as I cannot see that it has as yet been made public, which I think it should be, as it is of some importance

I have totalled up the figures and made a small Memo of my own which I give below for ready reference, but Dr Paimanto's own table of statistics is circulated as well

Taking the year 1874 which was one of unusually heavy rainfall following on a year of good rain when the number of troops was 1878 it is found there were 22 deaths and 77 cases of invaliding while in 1883 a year of deficient rain fall following on a bad year when the tank was very low there were 21 deaths and but 62 cases of invaliding out of a strength of 1846.

Yours

Than of you compare the returns for the year 1879 (a good year) following on a good year with 1882 (a bad year) following on a bad year you will find the health of the troops was better in the latter year of allowance be made for the difference in the strength of the Garrison

Average returns for years of good rain fall when the water supply in the Allen tank was ample i.e for the years 1873-1874 1878-1879. and 1880.

Average Strength	Average daily sick	Average Admission into hospital	Average no. of deaths	Average no. of cases of invaliding
1574	110.5	1949	15.6 or nearly 10 per 1000	67.8 or 43 per 1000

Same returns for the years 1875. 1876-1877-1881-1882-1883 when the Rainfall was deficient and the supply of water in the Allen tank was inadequate

1644	101.16	1774	18 or nearly 11 per 1000.	55.8 or 34 per 1000

In the year 1883 there was an outbreak of enteric fever in the station and among the troops there were many cases resulting ultimately as the Deputy Surgeon Generals return shows in 11 casualties.

For purpose of easy comparison I give below a table showing the average health of the troops for the series of years from 1873 to 1883 both inclusive; their health during years of good, and of inadequate water supply; and during the one year 1883 itself.

What period	Average strength	Average daily sick	average admission into hospital	average no: of deaths	average No: of cases of invaliding
For each year from 1873 to 1883 both inclusive	1612	105.5 or 65 per 1000	1853.8	16.9 or 10.44 per 1000	61.8 or 38.4 per 1000
For each of the years 1873. 1874. 1876. 1879. & 1880 when the water supply was ample	1574	110.5 or 70 per 1000	1949	15.6 or 9.91 per 1000	67.8 or 43.7 per 1000
For each of the years 1875, 76, 77, 81, 82 & 1883 when the water supply was inadequate	1644	101.16 or 61 per 1000	1774	18 or 10.94 per 1000	55.8 or 34 per 1000
For the year 1883 when the water supply was inadequate	1846	143 or 77 per 1000	2453	21 or 11.3 per 1000	62 or 33.58 per 1000

I do not mean to suggest for a moment that the water supply derived from the blown tank is not capable of improvement but it rather looks as if these figures showed that the state of the tank had little to do with the general health of the troops.

1407 E. P. Bradley
President Milwaukee
Citizens Association

Fine Copy
Secretary
President Milwaukee
Citizens Association.

Comparative Statement showing the State of health of the Bn
the year 1873 to 83 (both years inclusive), attributable to the e
when the rain fall was good and the Supply ample, and when the

Years	State of		Corps	Average Strength	Average daily sick	Admissions into Hospital	Death	
	Rainfall	Water Supply in the Kilkenny Lands					In Hospital	Out of
1873	good	Ample	H.M. Drs. C/B R.H.A. E/20 R.A. Details R.A. 18 Hussars & 89 Regiments.	1788	101	2010	12	3
1874	— do —	— do —	H.M. Drs C/C R.H.A. C/20, C/9, C/20 & D/20 R.A. C/18 R.A. & Details R.A. 18 Hussars & 89 Regts. 1/21 & 43 Regts.	1878	129	2055	18	4
1875	Scanty	inadequate	H.M. Drs C/C R.H.A. C/9 & D/10 R.A. Details R.A. 18 Hussars, 45 & 89 Regts.	1666	94	1674	13	5
1876	— do —	— do —	H.M. Drs C/C R.H.A. C/9 B&C R.A. & D/20 R.A. R.E. Details A.S.C. 14 Hussars, 45 Regts.	1631	68.82	1346	19	1
1877	— do —	— do —	C/B R.H.A. H.M. Drs R.A. A/6, D/6, K/6 R.A. R/E. 14 Hussars, 45 Regts & Details.	1710	83.43	1453	22	2
1878	good	Ample	H.M. Drs R.A. C/B R.H.A. A/6, D/6 & E/6 R.A. R/E. 14 Hussars, 45, 67 & L.W. 2/13 Regts. & Details.	1617	104	1897	14	4
1879	— do —	— do —	H.M. Drs R.A. D/B R.H.A. D/6, K/6 R.A. R.E. 14 Hussars, L.W. 2/13 & 38 Details & 67 Details.	1310	117.17	2125	15	1
1880	— do —	— do —	H.M. Drs R.A. D/B R.H.A. D/6, K/6 & D/3 R.A. R.E. 14 Hussars 67 Regts & 2/13 L.W. & Details.	1278	102	1659	7	—
1881	Scanty	inadequate	H.M. Drs R.A. D/B R.H.A. K/6 & D/3 R.A. R.E. Depot 14 Hussars & 2nd Bn Dunlo Regts.	1321	85	1677	7	1
1882	— do —	— do —	B/3 & E/6 R.H.A. D/3 & 2/1 R.A. 12 Royal Lancers. 1 Bn 84 L.I. & 42 Co: R.E. & Details.	1683	132.33	2042	17	—
1883	— do —	— do —	E/B. R.H.A. D/3, M/2, & 2/1 A.A. 12 Royal Lancers, 42 Co R.E. & 1 Bn 84 L.I.	1846	143.42	2453	20	1
good lead								

D/ Surgeon General's office H.M.F.
B. Drs & C. Drs.
Bangalore. 24 October 1884

tish Forces stationed in Bangalore in the several years from
upply of water in the Ulsoor Tank used by troops.—
ainfall was scanty and the supply inadequate.

Total	Invalided	Rates per 1000 of strength: Constantly sick	Admitted	Sick in and not hospital	Invalided	Chief causes of admissions: Small pox	Enteric fever	S.C. fever	Syphilis	Malaria	Dysentery & diarrhoea	Bronchitis and diseases of lungs	Chief causes of Deaths: Small pox	Enteric fever	S.C. fever	Cholera	Dysentery & diarrhoea	Bronchitis & diseases of lungs	Remarks
15	46	56.49	1124.16	8.33	25.78	-	9	-	86	-	135	85	-	-	-	-	2	-	
22	77	68.80	1093.66	11.71	41.01	2	17	-	-	-	107	-	1	3	-	-	-	-	
18	67	56.42	1004.80	10.80	40.21	-	2	-	-	-	-	-	-	-	-	-	-	-	
20	40	42.19	825.26	12.20	24.52	-	-	-	-	-	-	-	-	-	-	-	-	-	
24	53	48.79	855.43	14.03	30.99	-	12	-	-	5	-	-	-	7	-	3	-	-	
18	93	64.94	1173.16	11.13	57.51	-	-	-	-	-	44	68	-	-	-	-	-	3	
16	64	89.31	1622.13	12.21	48.85	-	-	225	204	-	192	52	-	-	5	-	1	3	
7	59	79.81	1298.12	5.47	46.16	-	-	41	160	-	78	34	-	-	-	-	1	1	
8	58	63.95	1261.85	6.01	43.64	8	2	13	246	-	108	45	1	2	-	-	-	1	
17	55	78.62	1214.49	10.10	32.68	-	19	18	73	-	159	52	-	7	-	-	-	1	
21	62	77.61	1328.81	11.37	33.58	3	41	11	102	-	213	82	-	11	-	-	-	-	

True Copy.

President and Commrs
of the Bangalore.

Signed Thomas Fairant.
Dy Surgeon-General H. M. B. T.
Bangalore Dec 4th 1866.

D. O. from Resident to Dewan, dated 22nd August 1885.

With reference to our conversation on the 20th instant about the water-supply of Bangalore Station and Pettah, I write to say that it seems doubtful whether Major Bowen could be spared for the special duty of investigating and reporting on the various questions which need consideration, and that even if he was available his employment would involve expense to the Mysore Government and to this Residency, which it would be as well to avoid if possible. Also when his report was ready it would have to be discussed by the members of the Committee which I proposed as an alternative measure and so at the end of his labors we should not be much nearer the goal than we are now.

Consequently I suggest that we have the Committee consisted of—

Mr. Ricketts,
Mr. McLaughlin, } as representatives for Mysore,

Colonel Burton, R. E.,
Major Maltby, } as representatives for the Civil and Military Station,

and of this Committee I would gladly, as already intimated to you, be the President.

The duty of the Committee would be to enquire into and report on all questions relating to the water-supply of the Bangalore Station and Pettah, with special regard for such arrangements as will ensure a distribution of water adequate to the various requirements and proper control over catchment areas and reservoirs and their connected channels.

Should you agree in my present proposal I would ask you to direct your representatives to put themselves in direct communication with me, and further I would beg that you would issue such orders as would give the Committee access to any records in the possession of the Mysore Government which it might wish to consult, and power to consult any officials whose opinions it might be desirable to ascertain.

D. O. from Dewan to Resident, dated 23rd August 1885.

Adverting to your D. O. letter of yesterday, I beg to say I agree that the Committee to consider the water-supply of Bangalore Civil and Military Station and the Pettah may consist of—

Mr. Ricketts,
Mr. McLaughlin, } representatives of Mysore,

Colonel Burton, R. E.,
Major Maltby, } representatives of Civil and Military Station.

I am also much obliged to you for consenting to become the President of the Committee.

If you agree, the Committee may enquire into and report upon—

1*st*. The existing sources of water-supply to Civil and Military Station and Pettah.

2*nd*. How they can be augmented or otherwise improved.

3*rd*. How they are at present distributed between the Station and the Pettah, and what redistribution is necessary or feasible so as to meet the wants of either place.

This in substance is what you now propose and what in our previous discussions we agreed to be fair and proper in every way.

I have as requested given the needful instructions to my representatives. They will put themselves in communication with you as President and will place at the disposal of yourself and other members whatever Mysore records may be required. My only anxiety is that to Mr. McLaughlin, the subject is not quite familiar, and as, owing to Captain Kensington's illness, he is left single-handed with heavy important work in connection with projects for possible Relief works, he may find some difficulty in making himself as useful as he might otherwise do. This is a matter

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to which I feel sure you will be able to apply some remedy by so arranging the meetings of the Committee as to have Mr. McLaughlin time to complete the urgent work now on his hand.

I have lately been thinking what would be the best way of giving Mr. McLaughlin the assistance which I know he requires very much. If I am not able to arrange it within the Province, I shall apply to you to get me what is required from Madras.

D. O. from Resident to Dewan, dated 28th August 1885.

In comparing your note of the 23rd instant with mine of the previous day concerning the Water-supply Committee, I observe that you do not mention control over catchment areas, reservoirs and their connected channels (by which I specially meant Police control in order to prevent pollution), or power of Committee to summon Mysore officials for purposes of consultation. These points I think that you have overlooked and I should be glad to know that you would agree to them.

D. O. from Dewan to Resident, dated 20th September 1885.

In reply to your D. O. letter of the 28th ultimo I beg to say that I agree to the Committee's enquiry and report including the question of control over catchment areas, reservoirs and their connected channels. The Committee will of course have the power of summoning Mysore officials for consultation.

Major Bowen, whose services have been recently placed at the disposal of the Mysore Government, will be able to afford such very valuable help to the Committee that I would prefer to appoint him in the place of Mr. McLaughlin as one of the Mysore representatives in the belief that this change will be quite acceptable to you.

SR 24

D. O. from Resident to Dewan, dated 12th April 1886.

With reference to Demi-official correspondence ending with your letter dated 20th September 1885, I have the pleasure to enclose for your consideration a copy of notes of conferences held on October 8th and March 12th last, concerning the water-supply of the Station and the Pettah. The main question, as you will see, is in regard to the utilization of the water in Sankey's Reservoir. The Mysore Government, and specially yourself have always met in such an accommodating spirit any request from this Residency for water from that source, that I have every reason to hope for your acquiescence in the conclusion (No. III) at which we arrived on this subject at our second meeting. Colonel Sankey's main object of continuously supplying the High Ground and neighbourhood with water having failed, and there being no present means or likelihood of achieving that object, it would be a dog-in-the-manger policy to oppose the utilization, by means of a low level sluice, of such water as can be drawn off for the benefit of the Pettah under circumstances when the high level sluice cannot be worked. This consideration apart, the Pettah has also a claim in the fact that the formation of Sankey's Reservoir circumscribed the catchment area of the Dharmambudhi Tank. The distribution of the water can, I think, always easily be determined by the Resident and the Dewan in consultation. It was by mutual agreement that Miller's tanks were thus replenished last autumn in a season of exceptional drought, and, as no difficulty was then experienced, there is ground for anticipating an equally satisfactory result in case of future necessities.

The exceedingly artificial character of the arrangements for supplying Bangalore with water is of course to be deplored. The remedies which have been suggested, such as an aqueduct from Nundydroog, artesian boring on the spot and pumping from the Cauvery, are as yet for various reasons impracticable, and probably a less costly solution of the difficulty would be to change the site of Bangalore. Circumstanced as we are at present, we can do (no?) more than ensure an equitable distribution and endeavour to keep the supply as pure as possible. Both these matters have engaged my attention constantly during the past ten months, and I am not without hope that by recent measures the quality of our water will be found to have been permanently improved and the storage to be more abundant than it has been in past days.

WATER-SUPPLY OF BANGALORE STATION AND PETTAH.

NOTES OF CONFERENCE.

Meeting held on March 12th, 1886.

PRESENT.

Mr. Girdlestone, Officiating Resident.
Colonel Burton, R. E., Executive Engineer to the Madras Government.
Major Bowen, R. E., Secretary to Mysore Government, P. W. D.
Major Maltby, President, Civil and Military Station Municipality, Bangalore.
Mr. Ricketts, Inspector General of Police.

I. Read Major Bowen's D. O. letter to the Officiating Resident, dated 18th February 1886, which is as follows:—

MY DEAR MR. GIRDLESTONE,

I have recently submitted to the Dewan a project for a low level sluice to the Upparhalli (Sankey's) Reservoir, and he has approved of the work. But before formally sanctioning it, he expressed a desire that I should consult the views of the Water-Supply Committee of which you are President, and ascertain whether they have formed any definite opinion on the subject.

This low level sluice is that referred to in para IV of the "Notes of Conference." It is not detrimental in any way to the interests of the Civil and Military Station, inasmuch as it will simply allow of the water now impounded below the level of the existing sluice being drawn off to the Dharmambudhi Tank, this water not being available for any other purpose, unless of course resort be had to pumping.

I need hardly say that it is very desirable to have the volume of water that cannot now be tapped, and is entirely useless, under command, so as to pass it down to the Pettah in times of drought, and I hope therefore I will have your early consent to the work being started.

It is unfortunate that, owing to your absence on tour, we cannot have a Committee Meeting on the subject, and the work is *urgent* as it must be finished off before the rains. However, I think I may safely say that the Committee cannot possibly take any objection to the new sluice which in any case need not be opened at any particular time without their consent, should any restriction on its use be deemed desirable by any of the members.

For ready reference, I enclose a copy of the "Notes of Conference."

As time presses I shall feel extremely obliged by your wiring (should you be within reach of a Telegraph Station) your approval.

Believe me,

Very sincerely yours,

C. BOWEN.

P. S.—Colonel Burton, who is a member of the Committee, is with you I believe. He may be able to advise you on the subject. I shall forward a copy of this note to Mr. Ricketts and Major Maltby for their information.

Major Maltby and Mr. Ricketts expressed their acquiescence in Major Bowen's proceedings. Colonel Burton suggested that the distribution of water from the original high level sluice and from the low level sluice now under construction should be proportionate to the respective populations of the Cantonment and the Pettah. He also drew attention to the point that it would be possible for the Durbar by means of the low level sluice so to draw off water constantly as to keep the supply in Sankey's Reservoir below the level at which it could be made available for the Cantonment, and that some understanding to prevent such a state of things was necessary. Mr. Ricketts proposed that it should be open for the Cantonment to draw off all available water by the high level sluice, for the Pettah to do the same through the low level sluice, and then for the Pettah to refrain from further operations till the level of the water in the Reservoir had risen sufficiently to be of practical use to the Cantonment. Mr. Girdlestone was of opinion that any hard and fast rule concerning distribution was unlikely to meet the varying requirements of the case. Consequently

he recommended that it should be left to the Resident and to the Dewan of the day jointly to agree when and to what extent use should be made of either sluice. To this Colonel Burton added that the level of the water in the Reservoir should be always carefully registered, and that a copy of the register should periodically be sent to the Resident by the Durbar. These recommendations were agreed to, Major Bowen remarking that the level was registered daily morning and evening.

II. To Mr. Ricketts' enquiry whether water could be brought into Sankey's Reservoir from the large tank on the Tumkur line, near the Railway Station and behind Subedar's Chuttrum, Major Bowen answered that Colonel Mullens' report showed this to be impracticable.

III. Colonel Burton urged the importance of not allowing existing sources of water supply to the Cantonment and Pettah to be interfered with for purposes of irrigation or otherwise, and quoted the case of the Jivanhalli Tank, the owner of which used the water for the fields below it (concerning this particular tank it may be observed that the question of its acquisition by the Municipality of the Civil and Military Station is still undetermined). Mr. Ricketts replied that the Durbar would not allow such interference and practically prevents it now in all cases which are brought to its notice.

IV. Mr. Ricketts referred to the increase of population in Bangalore likely to result from the railway extension which is now being contemplated to Hindupur and Harihar as a reason for further considering the question of increasing the general water supply of the Cantonment and Pettah. The Committee concluded that the only project which could be depended on was that of bringing water from Nundydroog, and that under present circumstances the roughly estimated cost (28 lakhs) of this undertaking was a bar to its consideration. Major Bowen intimated that contour channels leading to Sankey's Reservoir were being improved in view to the collection of as much water as possible. Colonel Burton advocated turfing of the sides of the Reservoir and of the contour channels so as to retain water more throughly. Major Bowen said that such a measure would be unduly expensive. He added that the gradients of contour channels were being attended to. Whatever outlay had been incurred on account of the water supply of Bangalore had been provided from Mysore funds. Was any help from the British Government probable? Mr. Girdlestone thought that no case had been made out for an Imperial grant-in-aid.

V. With reference to No. III of the Proceedings on the previous occasion, Major Bowen intimated that the work of cementing the duct from Sankey's Reservoir to the Miller's Tanks was in progress. This would stop leakage.

C. GIRDLESTONE.

It may be advisable hereafter to determine in what proportions, as between the British Government and the Durbar, the cost of up-keep of this tank is to be proportioned.

L. RICKETTS. 18—3—86.
E. P. MALTBY.

I am altogether adverse to the making of any low level sluice, as doing so is a perversion of the uses for which this unfortunate tank was sanctioned and constructed.

W. H. BURTON, Col., *R. E.*,
Executive Engineer, Presidency Division.

24th March 1886.

I must express dissent from Col. Burton's view of the case Mysore paid for the Reservoir, and is at present paying for its maintenance and improvement. The Pettah has a very proper claim on the water stored. That both Cantonment and Pettah should have a proportionate share according to requirements—the quantity of each year to be decided by the Resident and the Dewan—is a proper solution of the question.

C. BOWEN, Major, *R. E.* 27—3—86.

WATER-SUPPLY OF BANGALORE STATION AND PETTAH.

NOTES OF CONFERENCE.

Meeting held on 8th October 1885.

PRESENT.

Mr. Girdlestone, Officiating Resident.
Major Bowen, R. E., Secretary to Mysore Government, P. W. D.
Major Maltby, President, Civil and Military Station Municipality, Bangalore.
Mr. Ricketts, President, City Municipality, Bangalore.

I. Agreed, that after the abundant rain-fall of the last few days, the diversion sluice in Cunningham Road, for feeding Miller's Tank No. 3 might soon be closed; but that it was desirable to maintain the flow from Sankey's Reservoir into the Miller's Tank at present. Further, that the work of the above diversion, which was acquiesced in by the Dewan as a temporary arrangement only, might with advantage be made pakka in view to future requirements: that it should be left to the P. W. D. Secretary of the Mysore Government and the President of the Civil and Military Station to agree when it should be used, and that in case of difference, the Resident should settle the question. The channel with which such diversion has been connected is one of the main feeders of the Sampangi Tank. It was considered that the chief value of the Sampangi Tank is to maintain the water level in adjacent wells higher than otherwise would be possible, and that there is little demand on it as a reservoir for irrigating purposes. On this point, Major Bowen thought, that it would be desirable to obtain accurate information from the Deputy Commissioner of Bangalore.

II. Letter No. 765, dated July 4th 1885, from the Senior Surgeon, Mysore, to the President of the City Municipality and the Resolution of the City Municipal Commissioners thereon, dated August 18th 1885, were discussed. Mr. Ricketts observed that the villages of Dobbspet and Uperhalli were mainly occupied by domestic servants of residents in and near the High ground: that if these villages were demolished the inhabitants would only go somewhere-else in the neighbourhood and establish themselves; that the cost of compensation in case of demolishing Dobbspet and Uperhalli would be from Rs. 20,000 to Rs. 30,000 and that the Mysore Government, if pressed for improved sanitary measures, under Article 9 of the Instrument of Transfer, would be likely to reply that all the measures thought requisite in the time of British Administration were still enforced. He gave great attention to the cleanliness of both places, and would not allow either to increase. The opinion of the Committee was that in this part of Bangalore, as elsewhere, perfect purity of the water in the Tanks was, under the peculiar circumstances of the locality, unattainable, and that provided the City Municipality did all in its power to keep the gathering ground of Miller's Tanks in a clean and wholesome state it was doing all that could be reasonably expected of it.

Serial Nos. 6 and 18 of File 103 of 1885.

III. Major Bowen promised to have the duct from Sankey's Reservoir to the Miller's Tanks examined to see whether it was imperfect. He doubted whether there is much loss from it by leakage. The duct runs as a masonry channel in the open, and as a tunnel when it approaches the Palace Road, underneath which its course lies. From the eastern end of this tunnel it follows the line of an old water-course, with a somewhat rapid descent, and in this part there is no masonry used. Major Bowen questioned whether the carrying capacity of the duct was too small. It was intended to give a

gradual discharge sufficient for the daily wants of the population; and there never had been any idea of filling up Miller's Tanks rapidly from Sankey's Reservoir.

IV. Concerning the utilization of Sankey's Reservoir, Major Bowen represented that to increase the gathering ground would be unduly expensive: that the leakage which now takes place helps to increase the level of wells below, in and near the City, and of the Agara, Jakarayan and other Tanks. He also stated that there is a project now under consideration in his office for making a low level channel to the Dharmambudhi Tank. As to the effect of such a scheme on the interests of the Civil and Military Station, and as to the relative distribution of water to the City and the Civil and Military Station, the Members of the Committee decided to reserve their opinions till another meeting, so as to enable them in the meanwhile to obtain additional information. Reference was made to some final remark of Colonel Sankey, after the insufficiency of his water scheme had come to light, that he had a plan by which all difficulties could be overcome. Major Bowen supposed that this might mean a plan for raising water by machinery from wells to be sunk below the bund. Mr. Ricketts suggested that, if necessary, Colonel Sankey should be communicated with.

See p. p. 56,—58 of Collection No. 1 (Colonel Sankey's Memorandum of September 23rd, 1883) of Residency File 105 of 1885.

V. Mr. Girdlestone mentioned that Mr. J. W. Hayes, Municipal Commissioner of the Civil and Military Station, had informed him of the readiness of V. Gangadhara Chetty to spend Rs. 10,000 on leading water by pipes from Miller's Tank No. 3 to the Cantonment Bazar on condition of a cistern or fountain being erected at the latter place and bearing his name, and of another native gentleman of Bangalore, who wished his name not to be revealed, and who was prepared to carry on the water in the same way to Narayan Pille Street at a cost of Rs. 3,000. The Committee held that in any such increased facilities precautions must be taken against wasting water.

This has proved on enquiry by Major Maltby to be incorrect. V. Gangadhara Chetty states that he has no such intention.

VI. Mr. Ricketts urged that the Dharmambudhi Tank needed to be replenished, and that without a feeder from Sankey's Reservior, it never could supply the wants of the City. The Committee recommended that pending the disposal of the question of such feeder, all existing channels of supply should be kept clear and clean.

C. GIRDLESTONE.
L. RICKETTS.
C. BOWEN.
E. P. MALTBY.

IN. RE. SAMPANGI TANK.

There is no direct irrigation from this Tank, but the valley below it consists of valuable garden land which would deteriorate and ultimately be unfit to raise garden produce, if the irrigation wells and ponds were not fed and replenished annually by water percolation from the Tank.

The bed or surface of Sampangi covers too great an area and the shallow parts though submerged for a time soon dry up, and create undoubted miasma (some portions of the bed have been thus submerged, and then dried up no less than twice if not three times in the present year). It would be advisable to deepen the bed in parts and use the earth to raise the shallow parts well above water level.

A reservoir has been sunk in the bed on the Pattah side and the water therein is largely used by the inhabitants of that locality.

There is a similar reservoir on the City side, which is much used by water carts and chiefly for gardening purposes.

The Resident has seen the large well sunk in Nagappa's flower garden. I believe this well is also indirectly fed by springs produced by the water of Sampangi Tank.

10-10-85. L. RICKETTS.

I concur with these remarks.

C. BOWEN.

I have heard it argued by Irrigation officers that wells *below* a tank bund are not affected much by the tank holding water, but that wells *above* the tank are.

10-10-85. E. P. MALTBY.

Mysore Government Press, Bangalore.—28-4-86.—50.

Chepauk
Madras
3 October 85

Dear Mr Gudlestone

Yesterday only final arrangements, after a Change of such, were made by the President Madras Municipal Commrs to hear my objections & those of the Consulting Architect to Govt to the

Municipal Assessment on all Govt Buildings at Madras for taxing purposes - this to take place at Madras at 11.0 am on the 9th of October ——— Cond as a further but humble reason for not leaving Madras yet - my relative Colonel West arrived this morning with wife & 3 Children 12 days after being shipwrecked

in the "Bulsama" on the
Zanzam Coast - he
was so badly hurt in
that he died in me-
diately after landing
& Mr West knows no
me ~~from that~~ who
can assist her here
in this great trouble
but myself.

I must therefore ask
you to excuse me
attending the proposed

conference at the
Residency on the
8th Inst to be
able to leave Madras
by the 10th — but
will write again in
2 days to say Exact
day on wh: I shall be
able to be in Bangalore.

Yours very truly

W H Barton

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Headley

My dear Mr Liddelstone

I shall be very glad
to serve on the Committee
You have more in regard
to the water supply of
the Station at Pelthat —

I am here at
Headley and hope
to remain here until

the day before you
assemble the Committee
when I'll go up in order
to be present - so
will you kindly say
at what hour a day
next week it will
suit -

Yours sincerely
H H Asquith

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Dear Mr. Girdlestone

The Terms you name for the meeting on the water supply subject will suit me ~~very~~ well.

Yours truly

[illegible]

2nd Oct/85

I fancy Col. Burton is away in Madras —

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3rd October 1887

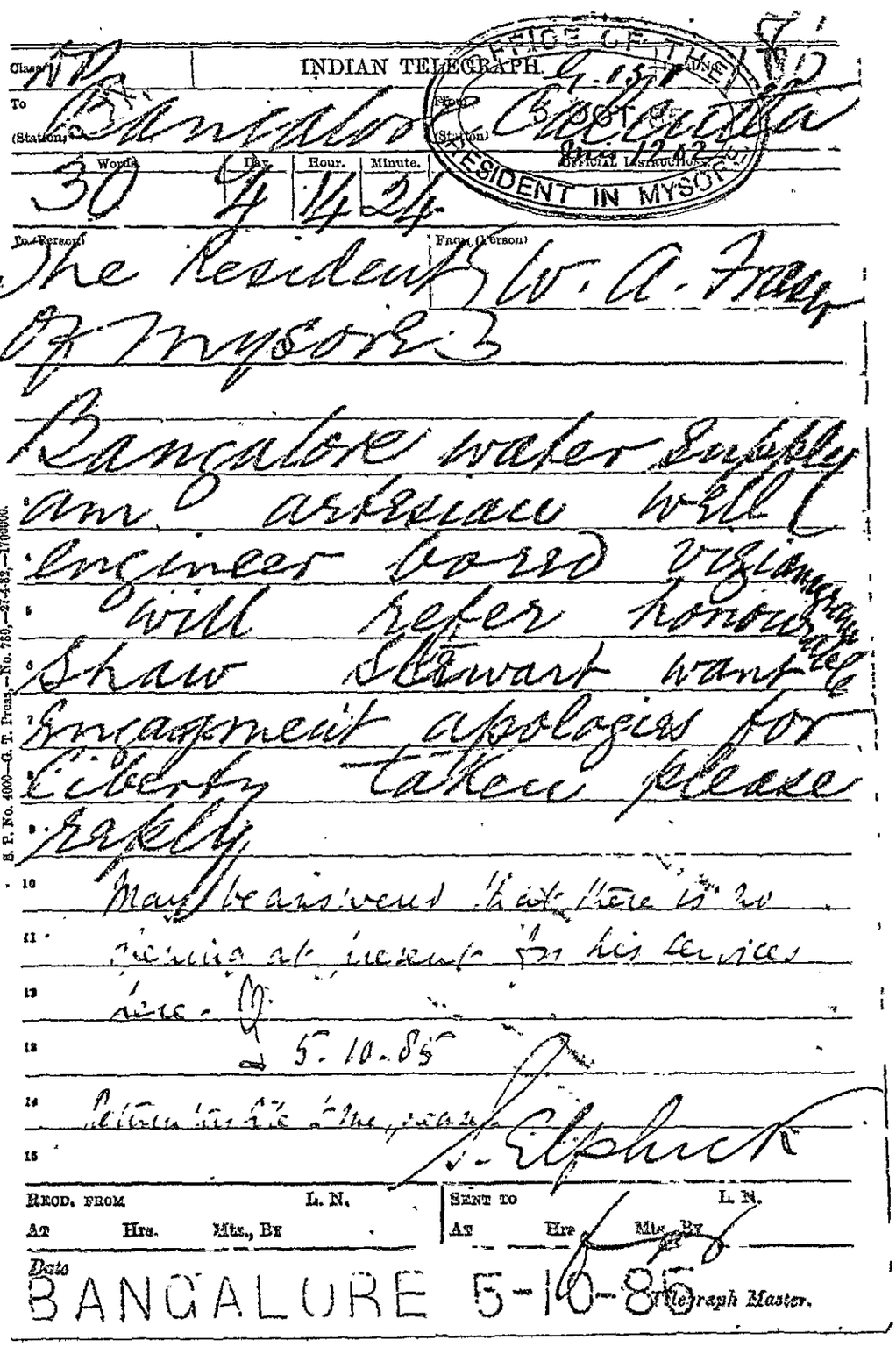
My dear Mr Gladstone

Thursday next, 8th October at 10.30 a.m. will be quite convenient for me to attend at the Residency, in connection with the Malta Supply subject.

Believe me

Yrs truly

Salisbury



Class VP | INDIAN TELEGRAPH. | 6.15pm | To
To Bangalore | Station | Office of Issue Bangalore | Station
Words 30 | Day 4 | Hour. 14 | Minute. 24 | Official Instructions 1242
OFFICE OF THE RESIDENT IN MYSORE

To (Person) The Resident & C.A. Agt of Mysore
From (Person)
Bangalore water Supply
am° arrears will
Engineer board Vigilance
will refer honourable
Shaw Stewart wants
Engagement apologies for
Liberty taken please
Reply
May I assume that there is no
objection to increase in his services
Yrs. M.
5.10.85
Letter to follow
J. Elphick

RECD. FROM L. N. At Hrs. Mts., By
SENT TO L. N. At Hrs. Mts. By
Date BANGALURE 5-10-85 Telegraph Master.

E. T. No. 4000—G. T. Press.—No. 760.—27-4-82.—1700000.

(Continuation of ~~Note or Precis.~~)

Resident's Office

No. 1063
349

Bangalore, 6th Oct. 85

Sir,

I am desired by the H.E. the Governor to acknowledge the receipt of your telegram of the 2nd instant & his address, and to express his regret that there is no opening at present for your services in connection with the Bangalore water supply.

I have &c.

C. 10.85

To W. A. Fraser Esq
Artesian Well Engineer,
Calcutta

Acknowledged Bangalore. The Grange.
9th Oct 1883.

Dear Sir, 9.10.83.

Mr H de Cloret, a Civil Engineer of great repute, was consulted by Mr Browning so far back as in 1864, about the water supply of Bangalore, and I believe the details of his scheme then furnished are in your office. This gentleman is now employed by the Madras Government in making survey estimates for a proposed line of Railway between Vellore, Villupuram & Mandiçhally. When he called on me some days ago, I asked him to let me have a memo of his views. He has sent me one, which I have had put into type & herewith send 4 Copies for

any

any service you may be pleased to make of the same.

My own views are that we should perfect the tanks we already have and improve their watersheds before entertaining any other scheme to increase the water supply. With the water thus secured locally and a system of pipes distributed over each locality (as in the case of the Bridetown water works at the Ulsoor tanks) I think there will be sufficient to meet all present requirements.

My best services are always at your command in anything within my power to do.

Yours very truly

S. W. Hayes

C. R. Cuthbertson Esq
British Resident Bangalore

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Camp Katbady, 25*th September* 1885.

Dear Mr. HAYES,

I send you herewith, a sketch of two designs, which I think practicable for your town water supply. Of course, having made no regular operations on the ground, I have been obliged to find, as best I could from records, the data upon which I have framed an estimate, however I think that the figures I have laid down cannot be far from the truth.

If your Municipal Commission and Syndicate, or even a Company, were anxious to have the necessary investigations made to ascertain exactly the cost of such works, I shall be very glad to enter into an agreement with them, so as to make the necessary surveys, plans, and estimates.

If a water rate was established, I think a nice interest on the Capital could be expected and even perhaps the Mysore Government would agree to guarantee an interest, as such an enterprise would be of great public utility.

Please kindly let me know what you say, and believe me, yours sincerely,

H. DeCLOSET.

My address is
52, *Poonamallee Road,*
MADRAS..

MEMO ON THE BANGALORE TOWN WATER SUPPLY.

Two designs for the water supply of Bangalore, could be suggested, but it is to be understood that these designs are simply suggestions; as without making a regular survey, and observations, I can only make an approximate estimate of the cost.

FIRST PROJECT.

It is the same as I have already proposed in 1864, and will be to collect waters in the vicinity of Nundydroog and to conduct the same into town by a Canal.

SECOND PROJECT.

The Second Project, will be to collect the water supplied by some springs in the neighbourhood of Bangalore, and apply Pumping Machinery to raise the same to a sufficient height to allow its being conveyed into Town.

In the First Project, rain and available streams will be collected into a large reservoir conveniently situated at a higher level than Bangalore; this reservoir, provided with all necessary appliance, will deliver the water into the head of a Canal, which will conduct the same into a service reservoir constructed in Town upon some elevated spot, near the High Ground.

The difference of level between the two reservoirs will be such so as to allow water to run with sufficient velocity, into the Canal, the length of which may be from 20 to 22 miles; such Canal could be very well constructed with earth works, provided with filtering basins, and will necessarily have to cross some spots, by means of acqueducts.

VOLUME OF WATER REQUIRED.

The population of Bangalore is 120,000 souls including Cantonment, Town and Pettah, but owing to the yearly increasing population it would be safe to calculate upon 200,000 souls.

If a daily allowance of (10) ten gallons per head is considered sufficient, the daily supply required will be gallons.....	2,000,000	
In cubic feet.....	320,000	cubic feet.
Or in cubic yards.....	11,851	cubic yards.
Or a yearly volume of.....	4,325,615	cubic yards.
Or say in round numbers	4,500,000	cubic yards.

Such supply could be derived—

1st, from the rains.
2nd, from streams to be diverted.

Nothing is yet known exactly as to the quantity of water which could be supplied by streams. If we consider only the rain supply, we find that the yearly rainfall on the Mysore plateau is estimated at

40 inches, this represents the fall of 93 millions of cubic feet per square mile or 3,814,814 cubic yards; but owing to evaporation, filtration, waste and other causes, one-third only of this rainfall could be secured, therefore the catchment area necessary for collecting yearly, say 4,000,000 cubic yards, would be 21 square miles.

The First Project will consist—

1 Reservoir Collector.
1 Canal and Aqueducts.
1 Set Filters.
1 Town Reservoir.

COST OF FIRST PROJECT.

Without entering into the sub-details of the Expenditure the principal items will be :—

	Rupees.
Reservoir Collector	60,000
24 Miles of Canal in Earthwork	1,20,000
Provision for Aqueducts	9,95,000
Filtering Basins	24,400
Town Reservoir	18,250
Surveys, Superintendence, Sundries, and Contingencies	2,82,350
Total Rupees	15,00,000

SECOND PROJECT.

In this project, the water which we suppose is sufficient at ten gallons per head, will be pumped from a Reservoir Collector, and delivered at the head of a Canal leading to the Town Reservoir; or directly into such Reservoir.

To compensate for the difference of level between Bangalore and the springs, and the difficulties arising in the construction of high stand pipes, it will be necessary to erect, say 4 sets of Pumping Apparata 1 mile apart from each other, or thereabouts; the arrangement of the Pumping Machinery will be the same for each set; and the cost of the whole would run probably as follows :—

	Rupees.
Collecting Reservoir	60,000
4 Sets of Pumping Engines with everything complete	4,50,000
Filtering Apparata	24,400
4⅔ Miles of Piping of 18″ Diameter	3,00,000
1 Mile Supply Channel	10,000
Reservoir in Town	18,400
Surveys, Superintendence, Sundries, and Contingencies	1,37,200
Total Rs	10,00,000

Cost of Pumping for one Year:

Coals or Fuel	20,000
Wages	15,000
Repairs, Sundries	2,000
Depreciation on Machinery at 3 per cent	12,500
Total Rs	49,500

I am of opinion that the First Project although the more expensive at first, will be found cheaper in the long run.

H. DECLOSET, C. E.

MADRAS, *20th September 1883.*

CAMP KATBADY, *25th September* 1885.

DEAR MR. HAYES,

I send you herewith, a sketch of two designs, which I think practicable for your town water supply. Of course, having made no regular operations on the ground, I have been obliged to find, as best I could from records, the data upon which I have framed an estimate, however I think that the figures I have laid down cannot be far from the truth.

If your Municipal Commission and Syndicate, or even a Company, were anxious to have the necessary investigations made to ascertain exactly the cost of such works, I shall be very glad to enter into an agreement with them, so as to make the necessary surveys, plans, and estimates.

If a water rate was established, I think a nice interest on the Capital could be expected and even perhaps the Mysore Government would agree to guarantee an interest, as such an enterprise would be of great public utility.

Please kindly let me know what you say, and believe me, yours sincerely,

H. DECLOSET.

My address is
52, *Poonamallee Road,*
MADRAS.

MEMO ON THE BANGALORE TOWN WATER SUPPLY.

Two designs for the water supply of Bangalore, could be suggested, but it is to be understood that these designs are simply suggestions; as without making a regular survey, and observations, I can only make an approximate estimate of the cost.

FIRST PROJECT.

It is the same as I have already proposed in 1864, and will be to collect waters in the vicinity of Nundydroog and to conduct the same into town by a Canal.

SECOND PROJECT.

The Second Project, will be to collect the water supplied by some springs in the neighbourhood of Bangalore, and apply Pumping Machinery to raise the same to a sufficient height to allow its being conveyed into Town.

In the First Project, rain and available streams will be collected into a large reservoir conveniently situated at a higher level than Bangalore; this reservoir, provided with all necessary appliance, will deliver the water into the head of a Canal, which will conduct the same into a service reservoir constructed in Town upon some elevated spot, near the High Ground.

The difference of level between the two reservoirs will be such so as to allow water to run with sufficient velocity, into the Canal, the length of which may be from 20 to 22 miles; such Canal could be very well constructed with earth works, provided with filtering basins, and will necessarily have to cross some spots, by means of acqueducts.

VOLUME OF WATER REQUIRED.

The population of Bangalore is 120,000 souls including Cantonment, Town and Pettah, but owing to the yearly increasing population it would be safe to calculate upon 200,000 souls.

If a daily allowance of (10) ten gallons per head is considered sufficient, the daily supply required will be gallons.....	2,000,000
In cubic feet.....	320,000 cubic feet.
Or in cubic yards.....	11,851 cubic yards.
Or a yearly volume of.....	4,325,615 cubic yards.
Or say in round numbers	4,500,000 cubic yards.

Such supply could be derived—

1st, from the rains.
2nd, from streams to be diverted.

Nothing is yet known exactly as to the quantity of water which could be supplied by streams. If we consider only the rain supply, we find that the yearly rainfall on the Mysore plateau is estimated at

40 inches, this represents the fall of 93 millions of cubic feet per square mile or 3,814,814 cubic yards; but owing to evaporation, filtration, waste and other causes, one-third only of this rainfall could be secured, therefore the catchment area necessary for collecting yearly, say 4,000,000 cubic yards, would be 21 square miles.

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1 Mile Supply Channel	10,000
Reservoir in Town	18,400
Surveys, Superintendence, Sundries, and Contingencies	1,37,200
Total Rs.	10,00,000

Cost of Pumping for one Year:

Coals or Fuel	20,000
Wages	15,000
Repairs, Sundries	2,000
Depreciation on Machinery at 3 per cent.	12,500
Total Rs.	49,500

I am of opinion that the First Project although the more expensive at first, will be found cheaper in the long run.

H. DECLOSET, C. E.

MADRAS, *20th September 1885.*

Bangalore
9th Oct. 1850.

62

Major P. P. Smalley
&c &c &c

Sir,

Bangalore

In reply to your letter dated the 8th Instant, I beg to inform you, that what you had heard with regard to my wish to give a certain amount towards bringing water into the Bazar is incorrect. I am &c

James Shortt
Major Commanding Bangalore Field Force

61

Dear Mr. Girdlestone

Please read & tear up the enclosed. So much for Mr. Hayes reference!

Yours truly
Beauclerk

9 Oct

File Resr. Office File No. 349 of 1885.

60 12

WATER-SUPPLY OF BANGALORE STATION AND PETTAH.

NOTES OF CONFERENCE.

Meeting held on 8th October 1885.

PRESENT.

Mr. Girdlestone, Officiating Resident.
Major Bowen, R. E., Secretary to Mysore Government, P. W. D.
Major Maltby, President, Civil and Military Station Municipality, Bangalore.
Mr. Ricketts, President, City Municipality, Bangalore.

I. Agreed, that after the abundant rain-fall of the last few days, the diversion sluice in Cunningham Road, for feeding Miller's Tank No. 3 might soon be closed: but that it was desirable to maintain the flow from Sankey's Reservoir into the Miller's Tank at present. Further, that the works of the above diversion, which was acquiesced in by the Dewan as a temporary arrangement only, might with advantage be made pukka in view to future requirements: that it should be left to the P. W. D. Secretary of the Mysore Government and the President of the Civil and Military Station to agree when it should be used, and that in case of difference, the Resident should settle the question. The channel with which such diversion has been connected is one of the main feeders of the Sampangi Tank. It was considered that the chief value of the Sampangi Tank is to maintain the water level in adjacent wells higher than otherwise would be possible, and that there is little demand on it as a reservoir for irrigating purposes. On this point, Major Bowen thought, that it would be desirable to obtain accurate information from the Deputy Commissioner of Bangalore.

II. Letter No. 765, dated July 4th 1885, from the Senior Surgeon, Mysore, to the President of the City Municipality and the Resolution of the City Municipal Commissioners thereon, dated August 18th 1885, were discussed. Mr. Ricketts observed that the villages of Dobbspet and Uperhalli were mainly occupied by domestic servants of residents in and near the High ground: that if these villages were demolished the inhabitants would only go somewhere else in the neighbourhood and establish themselves: that the cost of compensation in case of demolishing Dobbspet and Uperhalli would be from Rs. 20,000 to Rs. 30,000, and that the Mysore Government, if pressed for improved sanitary measures, under Article 9 of the Instrument of Transfer, would be likely to reply that all the measures thought requisite in the time of British Administration were still enforced. He gave great attention to the cleanliness of both places, and would not allow either to increase. The opinion of the Committee was that in this part of Bangalore, as elsewhere, perfect purity of the water in the Tanks was, under the peculiar circumstances of the locality, unattainable, and that provided the City Municipality did all in its power to keep the gathering ground of Miller's Tanks in a clean and wholesome state it was doing all that could be reasonably expected of it.

Serial Nos. 6 and 18 of File 103 of 1885.

III. Major Bowen promised to have the duct from Sankey's Reservoir to the Miller's Tanks examined to see whether it was imperfect. He doubted whether there is much loss from it by leakage. The duct runs as a masonry channel in the open, and as a tunnel when it approaches the Palace Road, underneath which its course lies. From the eastern end of this tunnel it follows the line of an old water-course, with a somewhat rapid descent, and in this part there is no masonry used. Major Bowen questioned whether the carrying capacity of the duct was too small. It was intended to give a

gradual discharge sufficient for the daily wants of the population; and there never had been any idea of filling up Miller's Tanks rapidly from Sankey's Reservoir.

IV. Concerning the utilization of Sankey's Reservoir, Major Bowen represented that to increase the gathering ground would be unduly expensive: that the leakage which now takes place helps to increase the level of wells below, in and near the City, and of the Agarah, Tackarayan and other tanks. He also stated that there is a project now under consideration in his office for making a low level channel to the Dharmambudi Tank. As to the effect of such a scheme on the interests of the Civil and Military Station, and as to the relative distribution of water to the City and the Civil and Military Station, the Members of the Committee decided to reserve their opinions till another meeting, so as to enable them in the meanwhile to obtain additional information. Reference was made to some final remark of Colonel Sankey, after the insufficiency of his water scheme had come to light, that he had a plan by which all difficulties could be overcome. Major Bowen supposed that this might mean a plan for raising water by machinery from wells to be sunk below the bund. Mr. Ricketts suggested that, if necessary, Colonel Sankey should be communicated with.

See p. p. 56,—58 of Collection No. I (Colonel Sankey's Memorandum of September 23rd 1883) of Residency File 105 of 1885.

V. Mr. Girdlestone mentioned that Mr. J. W. Hayes, Municipal Commissioner of the Civil and Military Station had informed him of the readiness of V. Gangadhara Chetty to spend Rs. 10,000 on leading water by pipes from Miller's Tank No. 3 to the Cantonment Bazar on condition of a cistern or founntain being erected at the latter place and bearing his name, and of another native gentleman of Bangalore, who wished his name not to be revealed, and who was prepared to carry on the water in the same way to Narayin Pille Street at a cost of Rs. 3,000. The Committee held that in any such increased facilities precautions must be taken against wasting water.

This has proved on enquiry by Major Maltby to to be incorrect. V. Gangadhara Chetty states that he has no such intention.

VI. Mr. Ricketts, urged that the Dharmambudi Tank needed to be replenished, and that without a feeder from Sankey's reservoir, it never could supply the wants of the City. The Committee recommended that pending the disposal of the question of such feeder, all existing channels of supply should be kept clear and clean.

C. GIRDLESTONE.
L. RICKETTS.
C. BOWEN.
E. P. MALTBY.

IN. RE. SUMPANGI TANK.

There is no direct irrigation from this Tank, but the valley below it consists of valuable garden land which would deteriorate and ultimately be unfit to raise garden produce, if the irrigation wells and ponds were not feed and replenished annually by water percolation from the Tank.

The bed or surface of Sumpangi covers too great an area and the shallow parts though submerged for a time soon dry up, and create undoubted miasma (some portions of the bed have been thus submerged, and then dried up no less than twice if not three times in the present year). It would be advisable to deepen the bed in parts and use the earth to raise the shallow parts well above water level.

A reservoir has been sunk in the bed on the Pettah side and the water therein is largly used by the inhabitants of that locality.

There is a similar reservoir on the City side, which is much used by water carts and chiefly for gardening purposes.

The Resident has seen the large well sunk in Nagappah's flower garden. I believe this well is also indirectly fed by springs produced by the water of Sumpangi Tank.

10-10-85. L. RICKETTS.

I concur with these remarks.

C. BOWEN.

I have heard it argued by Irrigation officers that wells *below* a tank bund are not affected much by the tank holding water, but that wells *above* the tank are.

10-10-85. E. P. MALTBY.

Mysore Residency Press, Bangalore,—16-10-1885.—

57 13

Resident's Office.

[DRAFT.]—For approval.

No. 2020 Enc: 2 each.
349

, the 21st Oct 1885.

To

Major Brown, R.E.
Secy to Govt. N.W.P.
Major Maltby, Asst. Civil &
Mily Sta. Bangalore.
Lt. Birkett, Asst. Civil
Municipality, Bangalore.
Col. Benson R.E

Sir,

I am dir: by Inst. Civil
Govt, to forward for
two Copies of the Notes of
Conference at the Secretariat
held on the 8 Oct 85, re-
garding the water supply
of Bangalore Station Pettah.

I have &c.

JMC
Asst. Resident
18.10.85

MJ 16.10.85.

SUBJECT.

Proceedings, No.

No. 767/127.

Mysore Public Works Deptt:
Central Office.
Bangalore 20th February 1886.

From,

Major C. Bowen R.E.
Secretary to the Government
of Mysore, P.W. Deptt:

To,

The President of the
Municipality
Civil and Military Station
Bangalore.

Thro' the Resident in Mysore.

Sir,

With reference to "Notes of Conference" dated 8th October 1885, on the subject of the water Supply of Bangalore, para 1, I have the honour to state that it seems to me necessary that the shutter of the new "diversion Sluice" referred to therein be kept closed and that the lifting gear be enclosed in a Street box fitted with a lock. The Keys of this box should I think be kept by the Mysore P.W. Department.

2. In the Notes referred to, it is stated "that it should be left to the P.W. department Secretary of the Mysore

Mysore Government and the President of the Civil and Military Station to agree when it (the sluice) should be used, and that in case of difference the Resident should settle the question"

3 Such an arrangement as this can obviously only be carried out if the sluice shutter be kept locked. As the advantages to be derived from opening the shutter will be gained solely by the Civil and Military Station, I have suggested that the keys be kept by an Officer of the Mysore P.W. Deptt: to be used only on receipt of special orders from me.

4 The arrangement proposed seems also very necessary to protect the sluice from being tampered with by mischievous, or irresponsible persons.

5. I shall be obliged if you will inform me if you agree to these proposals.

I have &c.
(Signed) C Bowen Major R.E.
Secy: to the Govt: of Mysore
P. W. Deptt:

No. T. 726-2-86.
79

"Office Copy"
W. Wamsley
26 Feb 86

Rd. 1.3.86.
p.p. Urgent.

16 Read. 1.3.86
53

SOUTH ARCOT DISTRICT

File No. 349 of 1885 Sub. Bangalore,
-mitted. without a "Note" as 18th February 86
the President knows the whole case.

My dear Mr. Priddeaux, H.L. 1.3.86

I have recently submitted to the Dewan a project for a low level sluice to the Ossakalli (Sankaya) Reservoir, and he has approved of the work. But before formally sanctioning it he expressed a desire that I should consult the views of the Water Supply Committee of which I am President, and ascertain whether they have formed any definite opinion on the subject. —

This low level sluice is that referred to in Para III of the "Notes of Conference". It is not detrimental in any way to the interests of the Civil and Military Station, inasmuch as it will simply allow of the water now impounded below the level of the existing sluice being drawn off to the Dharmambadi Tank, this water not being available for any other purpose, unless of

course visit + had to [illegible].
I need hardly say that it is very desirable
to have the [illegible] of water that cannot now
be tapped + is entirely useless, under command,
so as to pass it down to the Potteries in times
of drought, and I hope therefore I will have
early consent to the work being started.
It is unfortunate that, owing to your absence
on tour, we cannot have a Committee meeting
on the subject, and the work is urgent as it
must be finished off before the rains. However,
I think I may safely say that the Committee
cannot possibly take any objection to the new
sluice which in any case must not be opened
at any particular time without their consent,
should any restriction on its use be deemed
desirable by any of the members.
For ready reference I enclose a copy of
the "Notes of Conference".
As time presses I shall feel extremely
obliged by your writing (should you be visiting
Leek of a telegraphic station) your approval.
Believe me
Very sincerely Yours,
C. Hunter.

P.S.

C. Hunter, who is a member of the Committee,
Harvey & also a solicitor in the city. I
shall [illegible] of his visit to Leek to begin [illegible]
of their information.

51

Major Bowen's D.O. of
18. 2. 86.

Mr. Clarke Jalan Syphan I.
9.15 a
2-3-86

The cover was not received in this Office till yesterday morning - it was addressed direct by Major Bowen. To Mencana - hence the delay. 9.45 a 2.3.86

1. How comes this letter, the contents of wh. were of an important & urgent character, not have been sent to me in Coorg?

2. The Secretary is requested to invite Colonel Barton, Majors Bowen & Maltby & Mr. Ricketts to a meeting in the Residency at 10.15 A.M. on Saturday next, the 6th inst. Let me know when this is arranged - & also return this & the linked files to me a day or two before then.

Meeting.

3. I am retaining the maps submitted with File 303 of 85.

2.3.86..

RESIDENT'S OFFICE.

Dated, 2nd March 1886.

49 Serial No.

[DRAFT.]—For approval.

No. 86. of 403
3495

To.

Dear Col. Burton.
Major Boulnois.
~~Lieutenant~~ Maltby.
Mr. Nicketts.

I am directed by His Excellency to say he hopes it will be convenient for you to attend at the Residency at 10.15 Am. on Saturday next (6th instant) to discuss a project for a low level sluice to Sankaj River, in connection with the question of the water supply to the Ranjahan Station, and Pettah.

James Lemmy

9.AM

Circular H8

No. 484/3495 Dy 5th March/86.

Major Bowen has, I believe, not returned from Madras and is not expected till Monday next. Under these circumstances I think that it would be better to postpone the water-supply conference, which was to be at the Residency tomorrow morning at 10-15 A.M. till Tuesday next 9th instant at the same time. Would the Asst. Resident kindly circulate this to Colonel Burton, Mr. Ricketts and Major Maltby for information accordingly.

Dwt G.G.
5-3-86.

Adjourned, owing to my presence being needed at Mysore, till 12th inst.

G 6.3.86.

Forwarded to the undermentioned officers for information. Please initial opposite name.

Colonel Burton. seen
Major Maltby. seen
— — Bowen.
Mr. Ricketts. seen

Dy J. H. Nevill
Asst. Resident

5th March 1886.

Despatched for circulation at 1.30 P.M. BR. 5.3.86.

HT

Circular

Forwarded with the undermentioned information for officers for [illegible] - Please initial opposite name

Colonel Burton Seen WHB

Major Maltby WWM

— " — Bowen

Mr. Ricketts. Seen SHJ

I. H. Revell

Asst. Resdt

5th March 1886

Major Bowen has, I believe, not returned from Madras & is not expected till Monday next. Under these circumstances I think that it would be better to postpone the Water Supply Conference, wh. was to be at the Residency to-morrow morning at 10-15 A.M. till Tuesday next 9th inst. at the same time. Would the Asst. Resdt. kindly circulate this to Colonel Burton, Mr. Ricketts & Major Maltby for information accordingly.

5. 3. 86.

Hb.

Circular.

Owing to the Officiating Resident's visit to Mysore, the meeting fixed for Tuesday morning at 10.15 is adjourned to the same hour on the following Friday morning.

Forwarded to the undermentioned officers for information. Please initial opposite name.

Colonel Burton
Major Maltby
— " — Bowen.
Mr. Ricketts.

J. A. Saunders

Assistant to the Resident.

The Resident's Office
Bangalore, 6th March, 1886

H5 20

Water Supply of Bangalore Station

2 Pettah

Notes of Conference

Meeting held on March 12th 1886.

Present.-

Mr. Fiddleston: Offg. Resident

Colonel Burton. R.E. Executive Engr to the Madras Govt

Major Bowen. R.E. Secretary to Mysore Govt P. W. D.

Major Malthy. President, C & M Station Municipality: Bangalore.

Mr. Richetts. Inspector General of Police.

I. Read Major Bowen's d.o. letter to the Offg. Resr., dated 18th February 1886, which is as follows;

(See copy Sl. 16)

Major Malthy & Mr. Richetts explained

their acquiescence in Major Bowen's Proceedings. Colonel Burlton suggested that the distribution of water from the original high level sluice & from the low level sluice now under construction should be proportionate to the respective populations of the Cantonment & the Pettah. He also drew attention to the point that it would be possible for the Umbar by means of the low level sluice so to draw off water constantly as to keep the supply in Sankey's Reservoir below the level at which it could be made available for the Cantonment, & that some understanding to prevent such a state of things was necessary. Mr. Richetts proposed that it should be open for the Cantonment to draw off all available water by the high level sluice, for the Pettah to do the same through the low level

sluice, & then for the Pettah to operate from for the operations till the level of the Water in the Reservoir had been sufficiently low of practical use to the Cantonment. Mr. Fiddleshine was of opinion that any hard & fast rule concerning distribution was unlikely to meet the varying requirements of the case. Consequently he recommended that it should be left to the Resident & to the Dewan of the day jointly to agree when & to what extent use should be made of either sluice. To this Colonel Burton added that the level of the Water in the Reservoir should be always carefully registered & that a copy of the ~~entries~~ registers should periodically be sent to the Resident by the Dewan. These ~~Heads~~ were agreed to, Major

recommendations

Bowen remarking that the level was registered daily morning & evening.

II. To Mr. Richetts' enquiry whether water could be brought into Sankey's Reservoir from the large tank on the Tumkur line, near the railway Station & behind Sanbeh Jan's Cheltrum, Major Bowen answered that Colonel Mullens' report showed this to be impracticable.

III. Colonel Burton urged the importance of not allowing existing sources of water supply to the Cantonment & Peltah to be interfered with for purposes of irrigation or otherwise, & quoted the case of the Divanhalli Tank, the owner of which used the water for the fields below it. (Concerning this particular tank it may be observed that the question of its acquisition

by the Municipality of the C & M Stns is still undetermined). Mr. Ricketts replied that the Govt would not allow such interference, & practically prevents it now in all cases which are brought to its notice.

IV. Mr. Ricketts referred to the increase in Bangalore population likely to result from the railway extensions which is now being contemplated to Hindupur & Harihar as a reason for further considering the question of increasing the general water supply of the Cantonment & Pettah. The Committee concluded that the only project which could be depended on was that of bringing water from Nandidroog, & that under present circumstances the roughly estimated cost (20 lacs) of this undertaking

was a bar to its consideration. Major Bowen intimated that contour channels leading to Sankeys Reservoir were being improved in regard to the collection of as much water as possible. Colonel Butler advocated lining of the sides of the Reservoirs & of the contour channels, so as to retain water more thoroughly. Major Bowen said that such a measure would be unduly expensive. He added that the gradients of contour channels were being attended to. Whatever outlay had been incurred on account of the water supply of Bangalore had been provided from Mysore funds. Was any help from the British Govt possible? Mr. Fiddes-Watt thought that no case had been made out for an Imperial grant in aid.

V. With reference to No III of the Proceedings on the previous occasion Major Bowen intimated that the work of cementing the duct from Sankey's Reservoir to the Millers' Tanks was in progress. This would stop leakage.

Middleton

It may be advisable hereafter to determine in what proportions as between the British Govt. & the Sunbar, the cost of up-keep of this tank is to be proportioned.

Middleton

18-3-86

I am altogether adverse to the making of any low level sluice as doing so is a perversion of the uses for wh: this unfortunate tank was sanctioned & constructed

W H Hunter

24 March 1886. Actg Engr Press Dirn

I must express dissent from Col: Hunter's view of the case. Impost paid for the Reservoir is at present paying for its maintenance & improvement. The Petta has a very proper claim on the water stored. That both Cantonment & Petta should have a proportionate share according to requirements — the quantity each year to be decided by the Resident & the Diwan — is a proper solution of the question.

C. Thomson Maj. R.E.
27. 3. 96

No 657/349 dt 18th March 1886.

Memorandum

37.

The accompanying Notes of Conference on the water Supply of Bangalore Station and Petta[h] are circulated for Correction and amendment if needed, and for Signature

By Order

J. Wood

Asst Secy

H. 13.3.86.

To,

Colonel Burton. R.E.
Ex: Engr to the Madras Govt:

Major Bowen. R.E.
Secy. to Govt: P.W.D.

Major Mackay
President, C[a]nt. Station
Municipality - Bangalore.

Dr. Ricketts. Superintendent
of Police.

No. 657/349

Office of the Resident in Mysore
Bangalore 18th March 1886

35

Memorandum

The accompanying Notes of Conference on the water supply of Bangalore Station and Pettah are circulated for correction and amendment if needed, and for signature.

"By order"

J. H. Howell
Assistant Resident

To
Colonel Burton R. E.
Executive Engineer to
the Madras Government
Major Bowen R. E. C.S.
Secretary to Mysore Government
P. W. D.
Major Malthy
Resident Civil and Military
Station Municipality, Bangalore
Mr Ricketts. Inspector General
of Police

Js/

JHH

WATER-SUPPLY OF BANGALORE STATION AND PETTAH.

NOTES OF CONFERENCE.

Meeting held on March 12th, 1886.

PRESENT.

Mr. Girdlestone, Officiating Resident.
Colonel Burton, R. E., Executive Engineer to the Madras Government.
Major Bowen, R. E., Secretary to Mysore Government, P. W. D.
Major Maltby, President, Civil and Military Station Municipality, Bangalore.
Mr. Ricketts, Inspector General of Police.

I. Read Major Bowen's D. O. letter to the Officiating Resident, dated 18th February 1886, which is as follows;—

MY DEAR MR. GIRDLESTONE.

I have recently submitted to the Dewan a project for a low level sluice to the Ooparhalli (Sankey's) Reservoir, and he has approved of the work. But before formally sanctioning it, he expressed a desire that I should consult the views of the Water-Supply Committee of which you are President, and ascertain whether they have formed any definite opinion on the subject.

This low level sluice is that referred to in para IV of the "Notes of Conference." It is not detrimental in any way to the interests of the Civil and Military Station, in as much as it will simply allow of the water now impounded below the level of the existing sluice being drawn off to the Dharmambudi Tank, this water not being available for any other purpose, unless of course resort be had to pumping.

I need hardly say that it is very desirable to have the volume of water that cannot now be tapped and is entirely useless, under command, so as to pass it down to the Pettah in times of drought, and I hope therefore I will have your early consent to the work being started.

It is unfortunate that, owing to your absence on tour, we cannot have a Committee meeting on the subject, and the work is *urgent* as it must be finished off before the rains. However, I think I may safely say that the Committee cannot possibly take any objection to the new sluice which in any case need not be opened at any particular time without their consent, should any restriction on its use be deemed desirable by any of the members.

For ready reference I enclose a copy of the "Notes of Conference."

As time presses I shall feel extremely obliged by your wiring (should you be within reach of a Telegraph Station) your approval.

Believe me,
Very sincerely yours,
C. BOWEN.

P. S.—Colonel Burton, who is a member of the Committee, is with you I believe. He may be able to advise you on the subject. I shall forward a copy of this note to Mr. Ricketts and Major Maltby for their information.

Major Maltby and Mr. Ricketts expressed their acquiescence in Major Bowen's Proceedings. Colonel Burton suggested that the distribution of water from the original high level sluice and from the low level sluice now under construction should be proportionate to the respective populations of the Cantonment and the Pettah. He also drew attention to the point that it would be possible for the Durbar by means of the low level sluice so to draw off water constantly as to keep the supply in Sankey's Reservoir below the level at which it could be made available for the Cantonment, and that some understanding to prevent such a state of things was necessary. Mr. Ricketts proposed that it should be open for the Cantonment to draw off all available water by the high level sluice, for the Pettah to do the same through the low level sluice, and then for the Pettah to refrain from further operations till the level of the water in the Reservoir had risen sufficiently, to be of practical use to the Cantonment. Mr. Girdlestone was of opinion that any hard and fast rule concerning distribution was unlikely to meet the varying requirements of the case. Consequent-

ly he recommended that it should be left to the Resident and to the Dewan of the day jointly to agree when and to what extent use should be made of either sluice. To this Colonel Burton added that the level of the water in the Reservoir should be always carefully registered, and that a copy of the register should periodically be sent to the Resident by the Durbar. These recommendations were agreed to, Major Bowen remarking that the level was registered daily morning and evening.

II. To Mr. Ricketts' enquiry whether water could be brought into Sankey's Reservoir from the large tank on the Tumkur line, near the Railway Station and behind Subedar's Chuttrum, Major Bowen answered that Colonel Mullens' report showed this to be impracticable.

III. Colonel Burton urged the importance of not allowing existing sources of water supply to the Cantonment and Pettah to be interfered with for purposes of irrigation or otherwise, and quoted the case of the Jivanhalli Tank, the owner of which used the water for the fields below it (concerning this particular tank it may be observed that the question of its acquisition by the Municipality of the Civil and Military Station is still undetermined). Mr. Ricketts replied that the Durbar would not allow such interference, and practically prevents it now in all cases which are brought to its notice.

IV. Mr. Ricketts referred to the increase of population in Bangalore likely to result from the railway extension which is now being contemplated to Hindupur and Harihar as a reason for further considering the question of increasing the general water supply of the Cantonment and Pettah. The Committee concluded that the only project which could be depended on was that of bringing water from Nundidroog, and that under present circumstances the roughly estimated cost (28 lacs) of this undertaking was a bar to its consideration. Major Bowen intimated that contour channels leading to Sankey's Reservoir were being improved in view to the collection of as much water as possible. Colonel Burton advocated turfing of the sides of the Reservoir and of the contour channels, so as to retain water more thoroughly. Major Bowen said that such a measure would be unduly expensive. He added that the gradients of contour channels were being attended to. Whatever outlay had been incurred on account of the water supply of Bangalore had been provided from Mysore funds. Was any help from the British Government probable? Mr. Girdlestone thought that no case had been made out for an Imperial grant-in-aid.

V. With reference to No. III of the Proceedings on the previous occasion Major Bowen intimated that the work of cementing the duct from Sankey's Reservoir to the Miller's Tanks was in progress. This would stop leakage.

C. GIRDLESTONE.

It may be advisable hereafter to determine in what proportions, as between the British Government and the Durbar, the cost of up-keep of this tank is to be proportioned.

L. RICKETTS. 18—3—86.
E. P. MALTBY.

I am altogether adverse to the making of any low level sluice, as doing so is a perversion of the uses for which this unfortunate tank was sanctioned and constructed.

W. H. BURTON, Col. R. E.,
Executive Engineer, Presidency Division.

24th March 1886.

I must express dissent from Col. Burton's view of the case. Mysore paid for the Reservoir, and is at present paying for its maintenance and improvement. The Pettah has a very proper claim on the water stored. That both Cantonment and Pettah should have a proportionate share according to requirements—the quantity of each year to be decided by the Resident and the Dewan—is a proper solution of the question.

C. BOWEN, Major R. E. 27—3—86.

Mysore Residency Press, Bangalore.—3—4—86.—25.

RESIDENT'S OFFICE.

Dated, 6th April 1886.

31

Serial No. [illegible]

[DRAFT.]—For approval.

No. 894/3495 Encl. 2

To.

Col. Benson R.E.
Engr: Secy to the Madras Govt.
Major Bowen. R.E.
Secy. to the Mysore Govt. P.W.D.
Major Kraalty.
Resident C. & St. Station
Municipality Bangalore
Mr: Ricketts.
Supr. Genl. of Police

Secret No. 1.

Sir,

I am directed by the Chief Secretary to forward to you two Copies of the Notes of Conference at the Meeting held on the 12. Mar. 86 regarding the Water Supply of Bangalore Station & Petlah.

I have &c

[illegible]
Asst Resident.

A/ 3.4.86

D.O. 2924

Resident to Dewan

Dated April 12. 1886

With reference to demi official correspondence ending with your letter dated September 20th 1885- I have the pleasure to enclose for your consideration a copy of Notes of conferences held on October 8th & March 12th last concerning the water supply of the Station & the Pettah. The main question, as you will see, is in regard to the utilization of the water in Sankey's Reservoir. The Mysore Government & Officials, myself, have always met in such an accomodating spirit any request from this Residency for water from that source, that I have every reason to hope for your acquiescence in the Conclusion (No III) at-

which we arrived on this subject at our second meeting. Colonel Dankey's main object of continuing by supplying the High Ground & neighbourhood with water having failed, & there being no present means or likelihood of achieving that object, it would be a dog in the manger policy to oppose the utilization by means of a low level sluice of such water as can be drawn off for the benefit of the Pettah under circumstances when the high level sluice cannot be worked. This consideration apart, the Pettah has also a claim in the fact that the formation of Dankey's reservoir circumscribed the catchment area of the Dharmambudi Tank

2 The distribution of the water can, I think, always be easily determined by the Resident & the Dewan in Consultation. It was by mutual agreement that Millers Tanks were thus replenished last autumn in a season of exceptional drought & as no difficulty was then experienced there is ground for anticipating an equally satisfactory result in case of future necessities.

3 The exceedingly artificial character of the arrangements for supplying Bangalore with water is of course to be deplored. The remedies which have been suggested such as an aqueduct from Nundidroog, Artesian boring on the spot & pumping from the Cavery, are as yet for various reasons impracticable

& probably a less costly solution
If the difficulty would be to
change the site of Bangalore!
Circumstanced as we are at present
we can do more than ensure an
equitable distribution, & endeavour
to keep the supply as pure as
possible. Both these matters
have engaged my attention con-
-stantly during the past ten months
& I am not without hope that
by recent measures the quality
of our water will be found to
have been permanently improved
& the storage to be more abundant
than it has been in past days.

MINUTE, BY THE OFFICIATING RESIDENT, ON THE WATER SUPPLY OF BANGALORE.

The object of various measures to which the attention of this Residency has been given during the past fourteen months has been to increase the water supply of Bangalore and to improve the quality of the water.

2. To this end the bed of the Shoolay Tank was deepened and the weir and the embankment which surrounds it were raised in the spring of 1885, the result being that an additional depth of two and a half feet was secured over the whole reservoir. The cost of the work was Rs. 7,200. There still remains the work of enlarging the catchment area of this Tank and that at Hakitimanhalli, where more water is much required. The outlay on this account is estimated at Rs. 4,000, of which Rs. 1,000 have been entered in the present year's budget, and will be sanctioned, for a feeder on the side of Trinity Church.

3. During August and September 1885 about 35,000 cubic yards of earth were dug out from the bed of the Lower Ulsur Tank, on the northern and eastern sides, at a cost of about Rs. 5,600, and were formed into an island and an embankment on the eastern side, which are being laid out as ornamental grounds. In the conduct of all this work the help received from Colonel Burton, R. E., was very valuable. The total sum voted by the Municipality of the Civil and Military Station for the improvement of this Tank is Rs. 10,000. Since the end of last September the progress of excavation, and the raising of the waste weir, which was a part of the general scheme, have been stopped, owing to the high level of water in the reservoir caused by the autumnal rain. It is very desirable that both works should be taken in hand again whenever circumstances admit. Here as elsewhere it is of great importance to increase the capacity of the reservoir. For want of a higher waste weir much water ran off and was lost last October.

4. In connection with this particular supply, the Municipal Commissioners have exercised a wise forethought in acquiring the Jeevanhalli Tank. The cost of this has amounted to Rs. 6,675. The Tank will serve as a valuable feeder to the Upper Ulsur Tank.

5. The result of what has been done at Ulsur is to lessen in the Lower Tank the area exposed to evaporation, and to increase the capacity. As the level in the Lower Tank sinks, the Upper Tank is drawn upon at once to supply the deficiency, and so long as there is water in the Jeevanhalli Tank, the Upper Tank will similarly be replenished from it. The chief loss of water, in an extensive but comparatively shallow reservoir, such as the Lower Ulsur Tank, is due to evaporation, not to consumption. The device of preventing evaporation by means of aquatic foliage has not proved satisfactory in India. Hence the necessity for meeting the difficulty by restriction of area and corresponding excavation.

6. The Madras Government has a separate project under consideration, whereby, at a cost of about 2¼ lacs of rupees, it would fill the Lower Ulsur Tank entirely from a new catchment area on the east side of the Tank. The undertaking is prompted by the wish to afford the European soldiers, who are entirely dependent on the Ulsur reservoir, purer water than it is believed can, with the best conditions, be secured under the present system. As the Madras Government is ready to bear all the expense, and as it has given an assurance that the rain drainage from the cantonment bazaar &c., which now enters the Tank from the west, shall not be cut off till the success of the new gathering ground to the east shall have been fully established, the Municipal Commissioners of the Civil and Military Station have raised no objection to the proposal. They are averse to sharing the cost, not only because it would be difficult to find the necessary funds, but also because they do not feel justified in making such a marked change, so long as the water supply, as at present it exists, is acceptable to the townspeople and not unhealthy in its effects. The scheme is now before the Mysore Government, whose consent has been sought to the alienation of the land involved by it.

7. Much has been done of late to purify, and to maintain pure in its passage to the Ulsur Tanks, the water which runs thither from the western side. Within the

gathering ground there is much cultivated land. This it is practically impossible, owing to the prohibitive cost of compensation, to throw out of cultivation. But scavengering is systematically carried out, and patrolling frequent in all places of public resort. For the protection of the Tanks eight watchmen have been appointed at a cost to the Municipality of Rs. 56 a month. It having been found that on the occasion of heavy rain in the Cantonment bazaar the main drain overflowed into the main sewer, the dividing wall between them has been raised, so as to prevent this evil, and has satisfactorily withstood the test of the late sharp storms. The nuisance caused by the pollution of ground in and about the tanneries and potteries has been much diminished. New sites, beyond the limits of the catchment area, have been chosen for small pox and cholera camps, with special regard to the accommodation of the homeless poor in time of scarcity or famine; for experience has proved that the inhabitants of the town are best treated for infectious and contagious diseases in their own houses. A new site has also been chosen for the Hindu Burial Ground, which it is hoped that the Durbar will concede. In such case the present one will be closed with as little delay as possible.

8. The supply of water to Miller's Tanks, which is the third of the three great systems on which the Civil and Military Station depends, has been facilitated by the construction of a diversion sluice in Cunningham Road to serve Tank No. 3. The channel with which such diversion is connected is one of the principal feeders of the Sampangi Tank, which lies for the most part outside the limits of the Assigned Tract. Consequently, as the Durbar has a direct interest in the matter, it has been suggested that it should be left to the Public Works Department Secretary of the Mysore Government and to the President of the Civil and Military Station to agree when the diversion sluice should be used, and that in case of difference the Resident should settle the question. This arrangement I hope that the Durbar will acquiesce in.

9. Advantage would be gained, I believe, by deepening all three Miller's Tanks, provided that the lower soil is tenacious enough to hold water, and provided that there is no risk of setting free malarious influences if the present bottom be disturbed. Such has not been the result of the excavations at Shoolay and Ulsur. I also think favourably of a scheme advocated by Mr. J. W. Hayes, Municipal Commissioner, for the construction of another Reservoir below, but in close vicinity to the Shoolay Tank. The configuration of the ground is such that the undertaking is not likely to be very expensive. Mr. Hayes puts the cost at Rs. 15,000, irrespective of compensation for house property. Population in this neighbourhood is numerous and apparently on the increase. Hence the desirability of intercepting and holding water which, as actually happened last year, may otherwise run to waste. In the present year I am afraid there is no prospect of funds being available for this work. I am also strongly impressed with the necessity of taking water nearer to the houses of the inhabitants as soon as money can be spared. At present the distance to which poor persons have to go for water, specially those who live in the Cantonment Bazaar, is considerable. This improvement may perhaps be best effected by pumping from existing reservoirs through pipes into cisterns or open basins at convenient centres. In connection with it the establishment of drinking fountains and drinking troughs at places of general resort seems desirable.

10. Not long ago it was represented to me that the water level in the wells of the Civil and Military Station has been steadily getting lower for some years past. The fall has been variously attributed to the increased growth of casuarinas, which have a great tendency to absorb moisture, to a diminution in the rain fall, and to other climatic influences. The subject is, I think, worthy of investigation. At present the information at disposal is too limited to warrant the assumption that the water level in general has sunk. Till this fact has been established it is premature to speculate on the causes which may be at work.

11. The construction of the low level sluice from Sankey's reservoir for the benefit of the City of Bangalore does not in my opinion imperil the interests of the Civil and Military Station. Colonel Sankey's main object of continuously supplying the High Ground and neighbourhood with water having failed, and there being no present means or likelihood of achieving that object, it would be an act of selfishness to oppose the utilization of such water as can serve the City under circumstances when

the high level sluice cannot be worked. Apart from this consideration the city has a claim by reason of the catchment area of the Dharmabudi Tank having been circumscribed by the formation of Sankey's reservoir. The distribution of the water can always be determined by the Resident and the Dewan in consultation. It was by mutual agreement that Miller's Tanks were thus replenished last autumn in a season of exceptional drought. As no difficulty was then experienced there is reason for anticipating as satisfactory results in cases of future necessity. There seems no likelihood of raising the level in Sankey's reservoir, except at inordinate expense, and with risk of taking from the supply of other tanks in the neighbourhood.

12. The importance of not allowing present sources of water supply beyond the limits of the Assigned Tract to be interfered with for purposes of irrigation or otherwise has been recognized, and assurances have been given on the part of the Durbar that it will not allow such interference and that practically now it stops such interference in all cases which are brought to its notice.

13. There has not been leisure, on the part either of myself or of the Engineer officers who have favoured me with their help and advice in the above mentioned matters of more immediate importance, to go deeply into the larger consideration of making Bangalore independent of its present system of tanks and wells. Even the preliminary enquiries involved in such schemes as that of leading water from Nundidroog and of pumping from the Cavery would necessitate the employment of specially qualified professional men at no slight expense. That the cost of either scheme would be very great is beyond doubt. Such cost could only be met by a water rate on the population which would be unobjectionable, if it did not exceed the present cost of fetching water, but which otherwise might press on a community that believes municipal taxation to be already quite high enough. Geologists have hitherto declared against the practicability of Artesian boring. It may be that this process, when more perfected, may solve the difficulty. Such a measure would be less likely to be hampered by questions of compensation; it would be without the risk of intermediate interruption which is attendant on the other two schemes, and it might be comparatively inexpensive. The deep borings which are now being made at various points on the Kolar Gold Fields may show what volume of water is to be hoped for at specified levels under known conditions of intervening rock or other material, and may yield information on other important points. Meanwhile I think that the Municipalities of Bangalore will be wise in restricting themselves, as regards improvement, to the lines which they have been pursuing of late.

MAY 12TH 1886.

C. E. R. GIRDLESTONE.

Mysore Residency Press, Bangalore.—15-5-86.—100.

Dear Mr. Girdlestone

I have made a few notes in the margin of your Memo, and I return that document herewith.

£ 25. Yours truly

Lancaster

12th May/86

RESIDENT'S OFFICE.

Serial No. 20

[DRAFT.]—For approval.

No. 1417/3495 Encs 10.

Dated, 24th May 1886.

To

The Secy. to the Govt. of India
Foreign Dept.
Simla

Sir,

I do myself the honour to forward for the information of the G. G. in Council 10 Copies of my Memoir on the Water Supply of Bangalore

I have &c
(Sd) W. Ford
Offg. Resident.

H. 18. 5. 86.

28

RESIDENT'S OFFICE.

Serial No. 19

[DRAFT.]—For approval.

No. 1418 Enc 1
3495.

Dated, 21st May. 1886.

To

The Officer Commanding
Bangalore Divn

" Deputy Surgeon Genl
Bangalore.

" Secy. to the Govt of
Madras P.W.D.

Sir,

I am directed to forward for your information a copy of the Offg: Resident's minute on the water Supply of Bangalore.

I am &c.
(Sd)
Asst to Resdt.

Sd. No. 25

H. 18.5.86.

27

RESIDENT'S OFFICE.

Serial No. 18

[DRAFT.]—For approval.

No. 1419 En 25
3495

Dated, 21st May 1886.

To

The Resident
Municipal Comrs
C & M. Station

Sir,

I am dir: to forward for distribution amongst Municipal Comrs, and for Record in your Office, 25 Copies of ~~this~~ a Minute by the Offg. Resident on the water Supply of Bangalore.

I have &c
GAT
Offg Resident.

R/C 18.5.86

No. 1770

Government of Madras.

OFFICE G. 1804 25 MAY 86 RESIDENT IN MYSORE

30

PUBLIC WORKS DEPARTMENT.

17

To The Resident in Mysore.

Ootacamund 26th May 1886

Sir,

In acknowledging, with thanks, the receipt of the copy of minute on the water supply of Bangalore, forwarded with your Assistants' letter No. 1418-3495 dated 21st May 1886 I am directed to request that this Government may be favored

Serial No 25.

Serial No 28

Draft reply submitted for approval.
C. Subramanyam
31/5/86.

with two more copies of the

Minute

I have the honour to be

Sir

Your most obedt. servant

W. Mansfield

Colonel R.E.

Secretary to Govt. P.W. Dept.

E. F. M.

X

RESIDENT'S OFFICE.

Serial No. 31/15

[DRAFT.]—For approval.

No. 1579 / 3476 Encl 2

Dated, 4th May 1886.

To

The Secretary to the
Govt of Madras.
in the P. W. Department

Sir,

With reference to your letter
No. 177 D. dated the 26th May 1886,
I am directed to forward 2 copies
of the minute on the water supply
of Bangalore.

I have &c.

Serial No 30

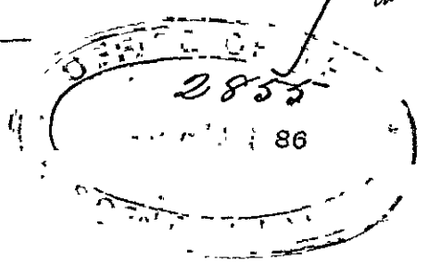
Serial No 25

EWD 2/6/86

C.K. Subramanya Iyer 31/5/86. Asst Resident.

8/52

Letter in D.



QUARTERMASTER-GENERAL'S OFFICE,

Ootacamund,

23rd August 1886.

No. 2786. B. 13

From

THE QUARTERMASTER-GENERAL,

To

THE Assistant to the Resident

in Mysore

SIR,

I have the honor, by order of His Excellency the Commander-in-chief, to request that this office may be favoured with a copy of the "Minute by the Officiating Resident on the water Supply at Bangalore, dated 12th May 1886."

I have the honor to be

Sir

Your obedient Servant

L. Nicolls Colonel

Offg: Quarter Master General.

Draft reply submitted for approval.

E. Mayne Lt.

27/10/86.

EM.

RESIDENT'S OFFICE.

For Resident's approval

Serial No. 3

[DRAFT.]—For approval. 11

No. 2430 Encl. 3495

Dated, 30 August 1886.

To

The Dy Master Genl.
Ootacamund.

Sir

With refce to your letter No 2706. B. dy 23d Augt. 1886, I am directed to forward a copy of the minute, by the late Offg: Resident, on the Water supply of Bangalore.

I have &c

Offg Resident

Dy Secy
27/10/86.

1st No 32.

" 25.

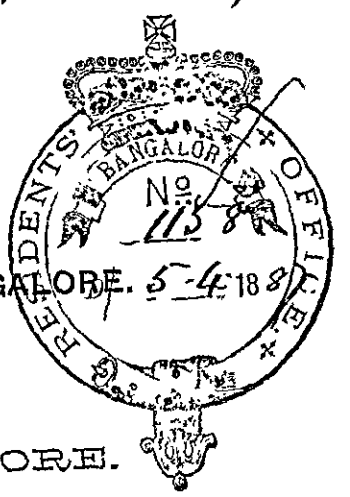
9 214

No. 2344 En

OFFICE OF THE MUNICIPAL COMMISSION,
CIVIL & MILITARY STATION,
Bangalore, 4 April 1887.

FROM

THE PRESIDENT,
MUNICIPAL COMMISSION,
CIVIL & MILITARY STATION,
BANGALORE.



To

The Assistant to the Resident in Mysore,
BANGALORE.

SIR,

I have the honor to bring to the notice of the Resident that the Municipal Commissioners of the Civil & Military Station of Bangalore having resolved at their meeting in February last to arrange with the Secretary to Mysore D. P. W in accordance with the terms of Para I of the Notes of Conference relating to the Water Supply of Bangalore dated 8th October 1885 Copy of which was furnished to this office with

Sl No. 13 Your letter No. 2020/349 dated 21 Idem to replenish the supply of water in

in the Millers Reservoir.

Copy of letter No. 1934 dated 26 February 1887 to the Secretary to the Government of Mysore D.P.W. and his reply thereto is Enclosed and I request you will be good enough with the permission of the Resident to address the Raman with the view to necessary orders being passed for diverting the water supply Reservoir into Millers Tanks Nos. 1 and 2.

As these tanks are very low just now and as there is no reason to expect tank filling showers before July I trust that the necessary sanction may be obtained at once for opening the sluice.

I have the honor to be
Sir
Your most obedt servt
H. Nagaratha
Presidency Commissioner
Cmo to Bangalore.

No: 1934.

Office of the Municipal Commissioner
Civil & military Station
Bangalore 26 Febry 1887

To
The Secretary to the
Government of Mysore D.P.W
Bangalore.

Sir.

Sl No. 12.

Referring to the notes of Conference dated 8 October 1885 on the water supply of Bangalore and your letter no: 767/127 dated 20 February 1886 I have the honor to request that as there is at present a large quantity of water in the Reservoirs on the Tumkur Road you will be so good as to sanction the sluice being opened and the water passed into Nos 1 and 3 Reservoirs

I have &c.
(signed) E. Henderson,
Superintending Engr.

Mysore Public Works Dept.
Central office
Bangalore 14 March 1887

From

No: 879/146

From Lt Col: C. Bowen R. E.
Secy to the Government of
Mysore D. P. W.

To
The President Municipal Comm.
Civil & Military Station
Bangalore.

Sir
Thro: the Asst Resident in Mysore.

In reply to your letter No: 1934 dated 26 Ultimo I have the honor to inform you that there appears to be no object to be gained in running down water just now, from the Water Supply Reservoir into Miller's Tanks Nos 1, 2 & 3 which hold enough for present requirements.

2. It would be well if a little work could be done towards clearing the tank beds and approaches and inlets.

I have &c.
(Sd) C. Bowen - Lt Col: R.E
Secy to the Govt of Mysore
D. P. W.

No: 7/59
Forwarded.
(Sd) D. Robertson.
Asst Resident.

True Copies
Thomas Smith
Presidency Comm
4: 4: 84

No. 1427/292

Mysore P.W. Department

Central Office

Bangalore 6th April 1887.

From

Lieutt Colonel C. Bowen, R.E.

Secretary to the Govt of Mysore P.W.D.

To

The President

C & M. Station Municipality

Thro' the Asst to the Resident in Mysore

Sir,

No. 1.2/1:34. In Continuation of my letter No. 879/146 of 14th Ultimo, I have the honor to inform you that I have now issued orders to the Executive Engineer in charge of the Cowar=halli Reservoir to run down water to No. 1 Tank so as to raise level of Water at present in this Tank to 4 feet above Sluice arches

This supply you are at liberty to indent on, as you wish, to supple=ment the present supply in

No.

Nos. 2 and 3, and when same has been exhausted, a further quantity will be let down, should circumstances indicate desirability of our doing so.

I have &c.

(Signed) C. Bowen Lieut. Col. R.E.,
Secretary to the Govt. of Mysore
& C.S.D.

Bangalore
6th April 1887

No. 7/79. dt 7-4-87.

My dear Sir,

The Superintending Engineer of Mysore having ordered the opening of the Sluice of the Water Supply Reservoir to admit of Water being let into the Pulicat Canal

his

No further action
seems necessary on
our letter No 2307 4th
April 1889.

Sir Your
obedient servant
20. 4 89

To
H. Clarke Esq
Resident Officer

No. 3411
290

Encls: 1
with 2 accompaniments
From

RESIDENTS' OFFICE BANGALORE No. 3168 D. 9. 9. 1887

Office of the Dewan of Mysore,
Bangalore, 7th September 1887.

The Chief Secretary to the Dewan of Mysore.

To

The Assistant to the Resident in Mysore.

Sir,

I have the honor by direction of the Dewan to forward herewith, the communication marginally denoted

From { Hon'ble Vice President City Municipal Commission Bangalore
No. 295 dated 6th September 1887,
To The President Municipal Commission Civil and Military Station of Bangalore.

I have the honor to be,
Sir,
Your most obedient Servant;

For Chief Secretary.